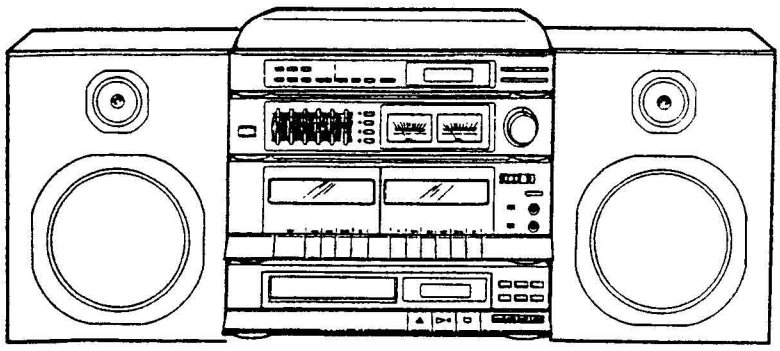
Service Manual

ORION

STEREO MIDI SYSTEM

MCD 120



CHASSIS CODE A

Bestell-Nr.:

4151

SPECIFICATIONS

General

Power Source:	220V, 50Hz
Power Consumption:	110 Watt
Dimensions:	Width: 360 mm
	Height: 335 mm
	Depth: 365 mm
Weight:	8.1 kg

Amplifier section

Peak music power output:	2×60 Watt
Loaded impedance:	Speakers: 8 ohm
	Headphone: 32 ohm

Tuner section

Frequency range:	FM: 87.5MHz-108MHz
	MW: 522KHZ-1620KHz
	LW: 153KHz-281KHz

Phonograph section

Type:	Belt drive, auto stop
Speed:	33-1/3 and 45 rpm
Motor:	DC motor
Replacement stylus:	N-5778

CD section

Type:	2-channel stereo compact disk player
Signal readout:	Non-contact, Semiconductor laser
Rotational speed:	Approx. 200 to 500 rpm CLV
Error correction:	CIRC (Cross Interleave Reed-Solomon Code)
Audio Channels:	2
Decorder:	16 bit linear quantization
D/A converter:	16 bit linear
Filter:	16 bit digital and LC low-pass
Frequency response:	5 Hz to 20 KHz
Dynamic range:	65 dB
Wow & flutter:	Unmeasurable

Cassette deck section

Tape:	Compact cassette tape
Bias and erasure system:	AC 80 KHz
Tape speed:	4.76 cm/sec.
Heads:	Playback: 1
	Record/Playback: 1
	Erase: 1
Motor:	DC motor: 2

CONTENTS

	PAGE
SPECIFICATIONS	1
HOW TO OPTICAL PICKUP	2
ELECTRICAL ADUSTMENTS	
1. BEFORE ELECTRICAL ADJUSTMENT	3
2. BASIC ADJUSTMENT	
2-1: TAPE SPEED	3
2-2: AZIMUTH	3
2-3: MW IF	3
2-4: FM IF	3
2-5: MW/LW COVER	3
2-6: MW/LW TRACKING	3
2-7: FM STEREO PILOT SIGNAL	4
2-8: FOCUS OFFSET	4
2-9: TRACKING OFFSET	4
2-10: VCO	4
2-11: EFM LEVEL	4
2-12: TE BALANCE	4
2-13: TRACKING GAIN	4
2-14: FOCUS GAIN	4
MAJOR COMPONENTS LOCATION GUIDE	5, 6

	PAGE
P.C.BOARDS	
MAIN	7
PLL EQ/LEVEL METER/HEADPHONE/LED/POWER SWITCH	8
CD DECORDER/CD CONTROL/FILTER	9
SCHEMATIC DIAGRAMS	
MAIN 1	10
MAIN 2	11
MAIN/LED/LEVEL METER/HEADPHONE/POWER SWITCH/FILTER	12
PLL EQ	13
CD DECORDER 1	14
CD DECORDER 2	15
CD CONTROL	16
MECHANICAL EXPLODED VIEW	17, 18
DECK EXPLODED VIEW A	19
DECK EXPLODED VIEW B	20
PLAYER MECHANICAL EXPLODED VIEW	21
CD MECHANICAL EXPLODED VIEW	22
MECHANICAL REPLACEMENT PARTS LIST	23
DECK REPLACEMENT PARTS LIST	24
PLAYER REPLACEMENT PARTS LIST	25
CD REPLACEMENT PARTS LIST	25
ELECTRICAL REPLACEMENT PARTS LIST	26~28
INTERCHANGEABLE PARTS LIST	28

HOW TO OPTICAL PICKUP

1. ANTICIPATION OF STATIC DISCHARGE

The LASER DIODE (LD) and PHOTO DIODE (PD) in the OPTICAL PICKUP (OP) are weak against the static discharge and surge current.
There fore prepare the enough static discharge removing before assembly.

1. Use of the wrist lap.
2. Use of the static discharge mat.
3. The soldering iron should have the ceramic heater or contacted with the ground.

Open the LD short part after connecting the connector.

2. DIRT OF LENS

If the surface of the lens have dirt, dust, finger print or grease, the jitter will fail, the servo will fail.
So do not have the dirt of lens. When the lens have dirt, take the isopropyl alcohol on the cotton stick, then clean from the center of the lens to outside like screw softly.
If you clean the lens with much isopropyl alcohol strongly, the coat of the lens surface will break. Please take care.

3. HOW TO CONNECT THE CONNECTOR

When you connect the connector to OP, support the back of the connector PCB of OP by finger and connect it.
If you do not support the back of the forward gear part takes forced power, then the gear may be broken.

ELECTRICAL ADJUSTMENTS

1. BEFORE ELECTRICAL ADJUSTMENT

These are adjustments when you replace electric parts or PCB ass'y.
When you repair the electric circuit, please read these adjustments.

1-1: Prepare the following measurement tools for the electrical adjustment.

1. Frequency Counter
2. Stereo Triggerscope
3. AM/FM Sweepscope
4. AM/FM Signal Generator
5. Digital Voltmeter
6. Oscilloscope (2 Channel Type)
7. AC Voltmeter
8. CD Filter **(Refer to Fig. 2-3)**

2. BASIC ADJUSTMENT

2-1: TAPE SPEED

1. Connect the frequency counter to speaker jack.
2. Load the FLUTTER TAPE (MTT-111N: 3KHz) to the DECK A, then play the tape.
3. Solder bridge between TP2 of the MAIN PCB and the ground.
4. Set the tape speed to Hi-speed position.
5. Adjust **VR303** until the tape speed will be 6030±30Hz.
6. Remove the solder bridge between TP2 of the MAIN PCB and ground.
7. Set the tape speed to Normal speed position.
8. Adjust **VR301** until the tape speed will be 3015±30Hz.
9. Adjust DECK B as same as the DECK A.
   Hi-speed position ------- Adjust **VR304**
   Normal speed position --- Adjust **VR302**
10. Adjust the tape speed difference between the DECK A and DECK B to the following figure.
    Hi-speed ------- | A-B | ≦ 30Hz
    Normal speed --- | A-B | ≦ 15Hz

2-2: AZIMUTH

1. Connect the stereo triggerscope speaker jack.
2. Load the AZIMUTH TAPE (MTT-114N: 10KHz) to the DECK A, then play the tape.
3. Adjust **SCREW A** until the level will be maximum and the lissajus's waveform will be right upper line. **(Refer to Fig. 2-1)**
4. Adjust **SCREW B** as same as the DECK A as for the DECK B.

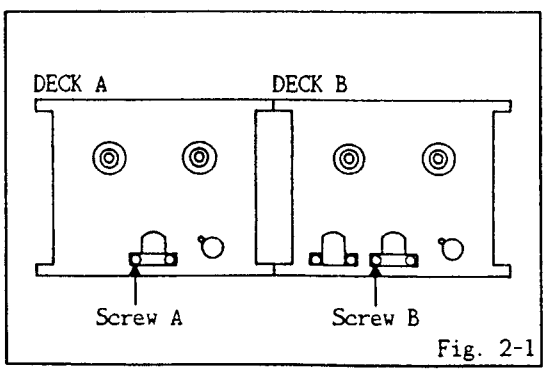


Fig. 2-1

2-3: MW IF

1. Adjust the MW position until the frequencies will be set to 522KHz.
2. Connect the output terminal of the AM/FM Sweepscope to point A through the capacitor 0.022μF and connect the input terminal to point B.
3. Adjust **T101** until the waveform marker (450KHz) will become as shown in **Fig. 2-2.**

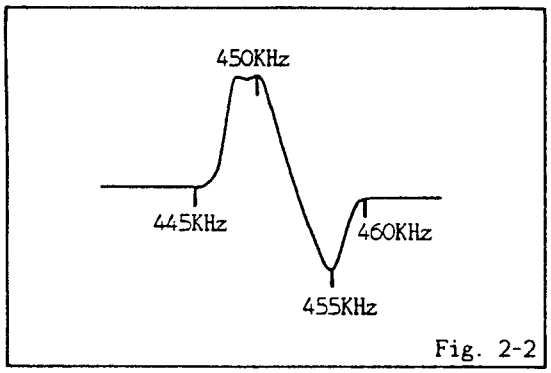


Fig. 2-2

2-4: FM IF

1. Adjust the FM position until the frequencies will be set to 98.0MHz.
2. Output the 98.0MHz signal (level: 60dB, modulation: 22.5KHz) from the AM/FM Signal Generator.
3. Connect a digital voltmeter to pin 9 of IC101 and pin 20 of IC101.
4. Adjust **T102** until the voltage will be 0V.

2-5: MW/LW COVER

2-5-A: MW COVER

1. Adjust the MW position until the frequencies will be set to 522KHz.
2. Connect a digital voltmeter to point C.
3. Adjust **L102** until the tuning voltage will be 1.2V.
4. Set the frequencies to 1620KHz.
5. Adjust **TC103** until the tuning voltage will be 8.70V.
6. Repeat steps 3 and 5 some times.

2-5-B: LW COVER

1. Adjust the LW position until the frequencies will be set to 153KHz.
2. Connect a digital voltmeter to point C.
3. Adjust **L103** until the tuning voltage will be 1.4V.

2-6: MW/LW TRACKING

2-6-A: MW TRACKING

1. Adjust the MW position until the frequencies will be set to 603KHz.
2. Output the 603KHz signal (level: 90dB) from the AM/FM Signal Generator through loop antenna.
3. Connect the oscilloscope to AC voltmeter.
4. Connect the AC voltmeter to speaker jack.
5. Adjust the MW coil of the antenna until the level or waveform will not be bigger while the bar antenna adjustment bar is closed to the bar antenna. (The distance between the loop antenna and the bar antenna: 60cm)
6. Set the frequencies to 1404KHz.
7. Output the 1404KHz signal (level: 90dB) from the AM/FM Signal Generator through loop antenna.
8. Adjust **TC102** as same as step 5.
9. Fix the coil adjusted in step 5.

ELECTRICAL ADJUSTMENTS

2-6-B: LW TRACKING

1. Adjust the LW position until the frequencies will be set to 164KHz.
2. Output the 164KHz signal (level: 90dB) from the AM/FM Signal Generator through loop antenna.
3. Connect the oscilloscope to AC voltmeter.
4. Connect the AC voltmeter to speaker jack.
5. Adjust the LW coil of the antenna until the level or waveform will not be bigger while the bar antenna adjustment bar is closed to the bar antenna. (The distance between the loop antenna and the bar antenna: 60cm)
6. Set the frequencies to 272KHz.
7. Output the 272KHz signal (level: 90dB) from the AM/FM Signal Generator through loop antenna.
8. Adjust **TC101** as same as step 5.
9. Fix the coil adjusted in step 5.

2-7: FM STEREO PILOT SIGNAL

1. Adjust the FM position until the frequencies will be set to 87.5KHz.
2. Connect the frequency counter pin 12 of IC102.
3. Adjust **VR101** until the connect will be 19.0KHz.

2-8: FOCUS OFFSET

1. Set the CD Player to stop mode.
2. Connect a digital voltmeter to TP1 of the CD PCB.
3. Adjust **VR803** until the voltage will be 0.8V.

2-9: TRACKING OFFSET

1. Set the CD Player to stop mode.
2. Connect a digital voltmeter to TP2 of the CD PCB.
3. Adjust **VR805** until the voltage will be 0V.

2-10: VCO

1. Set the CD Player to stop mode.
2. Solder bridge between the point D (EFM) and the ground.
3. Connect the frequency counter to point E (CK).
4. Adjust **L801** until the counter will be 4.3218MHz.

2-11: EFM LEVEL

1. Load the SONY TEST CD-4 to CD Player and play the track 1.
2. Connect the oscilloscope to point D (EFM).
3. Adjust **VR801** until the EFM level will be 2Vp-p.

2-12: TE BALANCE

1. Load the SONY TEST CD-4 to the CD Player.
2. Solder bridge between TP4 and TP5.
3. Connect the oscilloscope to TP3.
4. Play the CD, then the error will be indicated and stop the disk.
   Play the CD again even if the error will be indicated. (It will be stop after 20 seconds will be passed. Play the CD again.)
5. Adjust **VR806** until the up area of the waveform from 0V will be same as the down area.

2-13: TRACKING GAIN

1. Load the SONY TEST CD-4 to CD Player and play the track 7.
2. Connect the input side ground of the CD Filter to the PCB ground.
3. Connect the input terminal of CD Filter to CP806.
4. Connect the AC voltmeter to the output terminal of CD Filter.
4. Adjust **VR804** until the CH-1 of the AC voltmeter will be −30dB.

2-14: FOCUS GAIN

1. Load the SONY TEST CD-4 to CD Player and play the track 7.
2. Connect the input side ground of the CD Filter to the PCB ground.
3. Connect the input terminal of CD Filter to CP807.
4. Connect the AC voltmeter to the output terminal of CD Filter.
4. Adjust **VR802** until the CH-1 of the AC voltmeter will be −40dB.

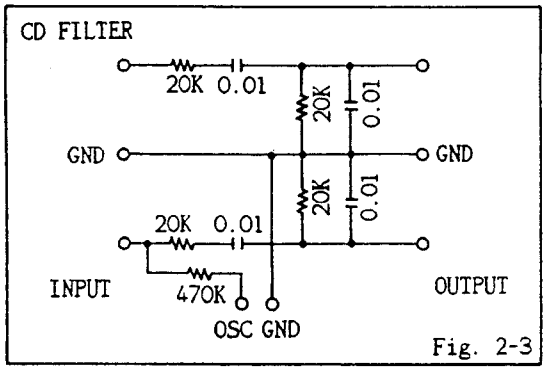
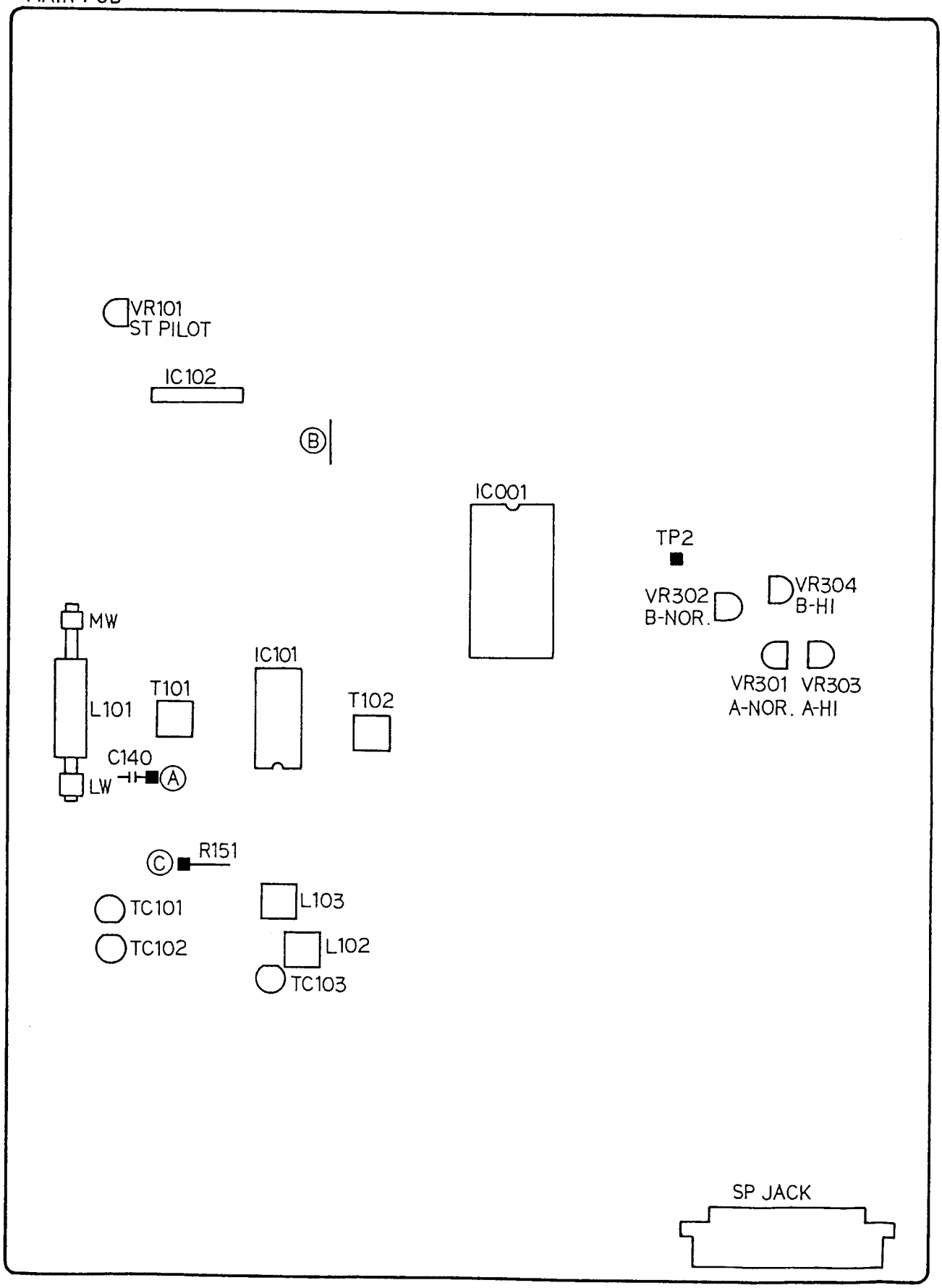


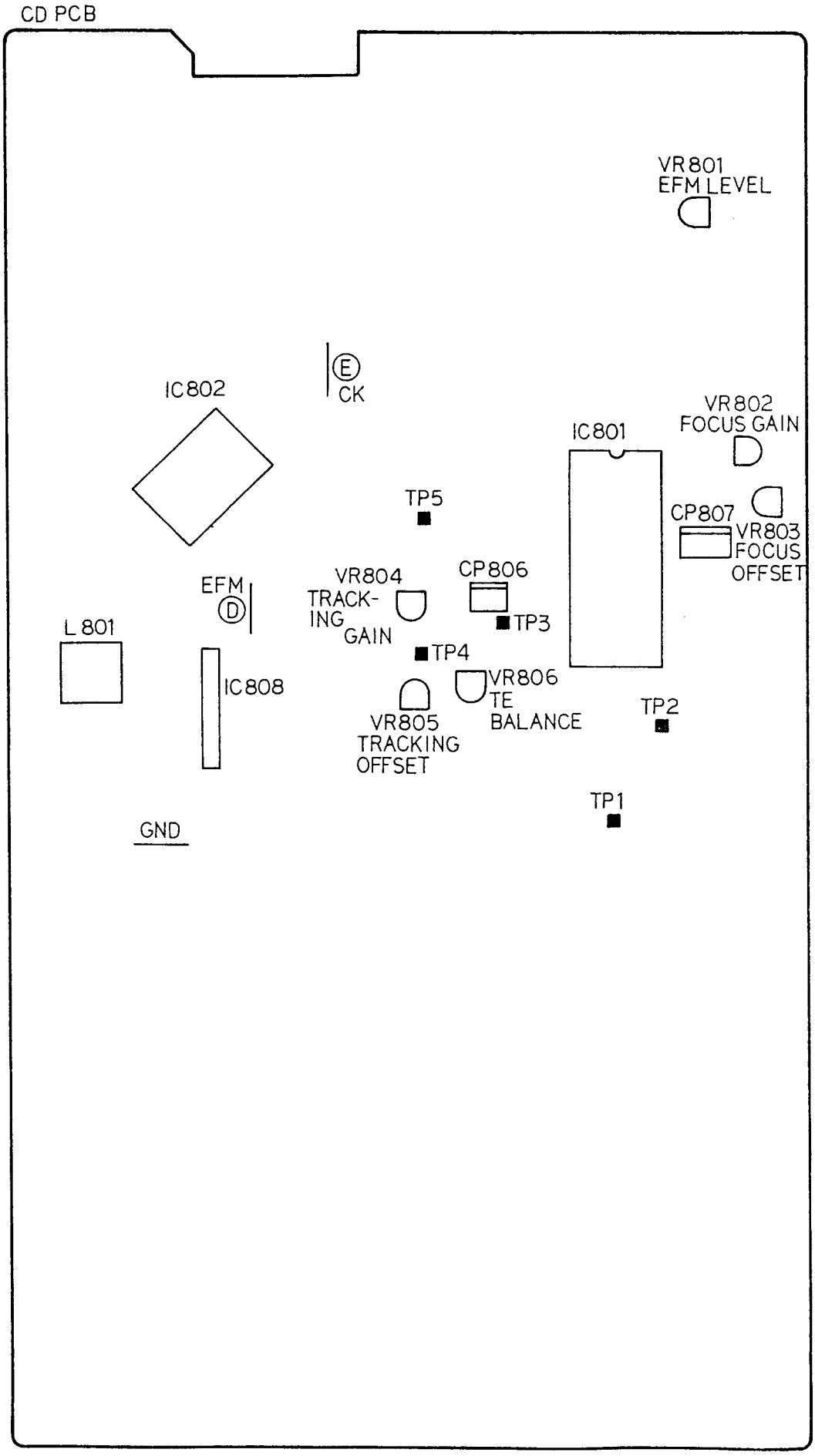
Fig. 2-3

MAJOR COMPONENTS LOCATION GUIDE

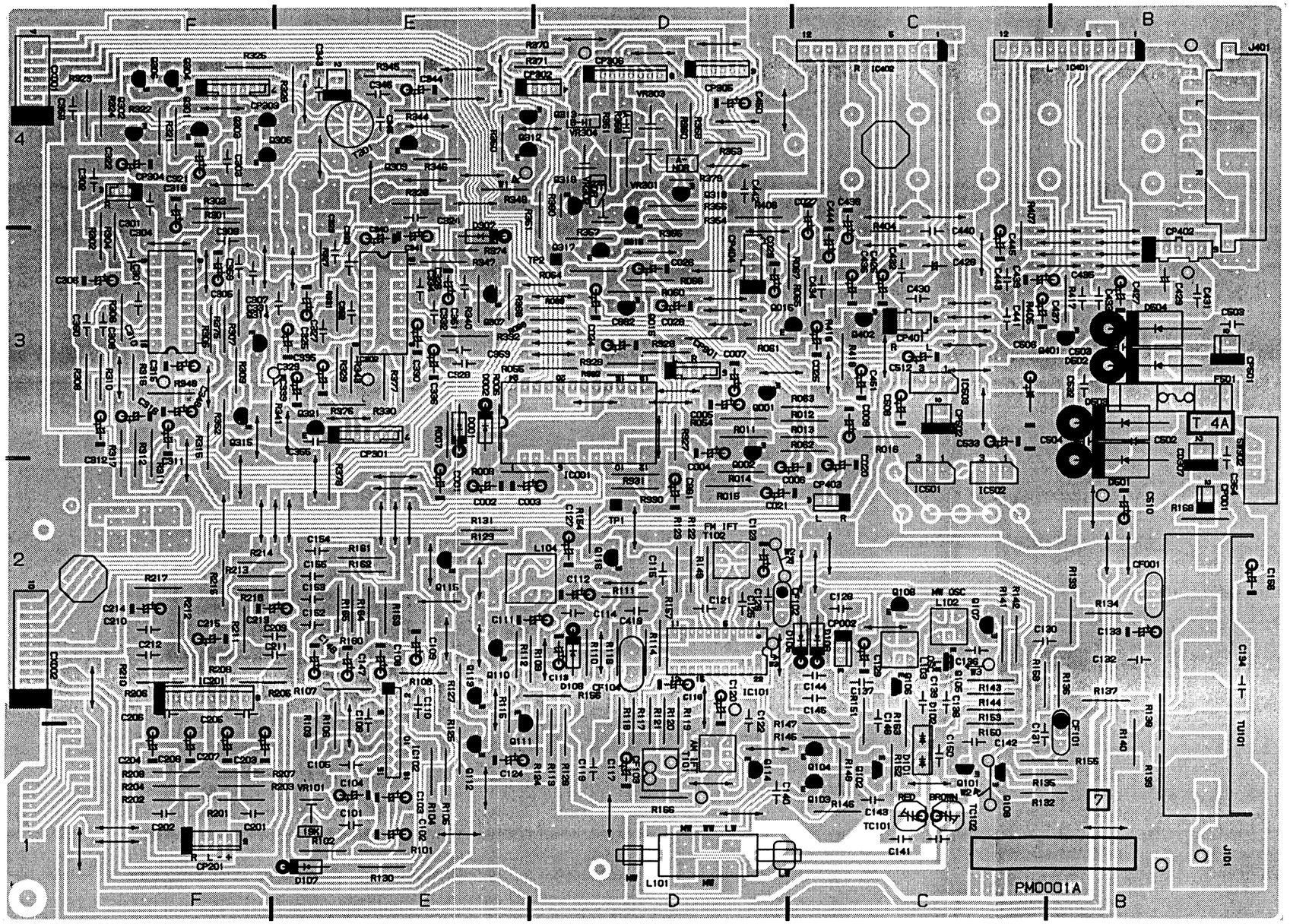
MAIN PCB



MAJOR COMPONENTS LOCATION GUIDE

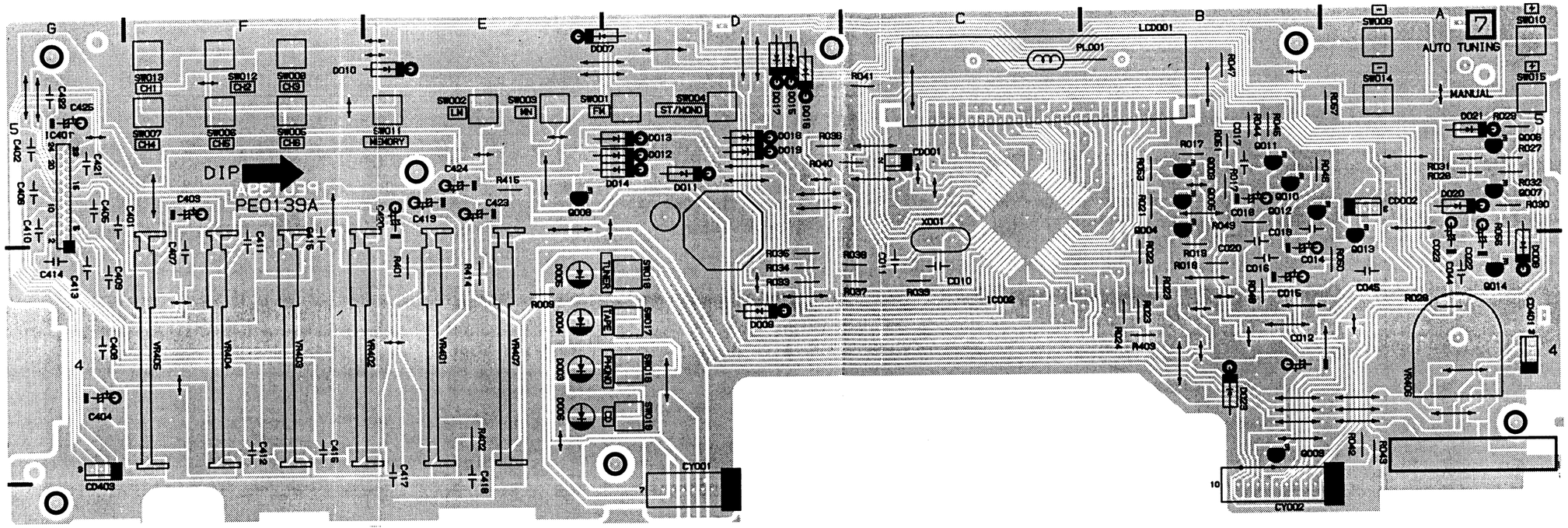


MAIN P.C.BOARD

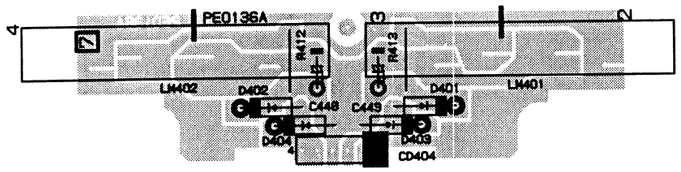


MAIN P.C.BOARD

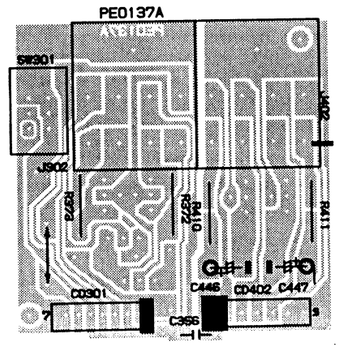
PLL EQ P.C.BOARD



LEVEL METER P.C.BOARD

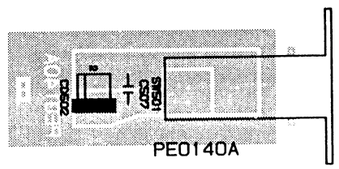


HEADPHONE P.C.BOARD

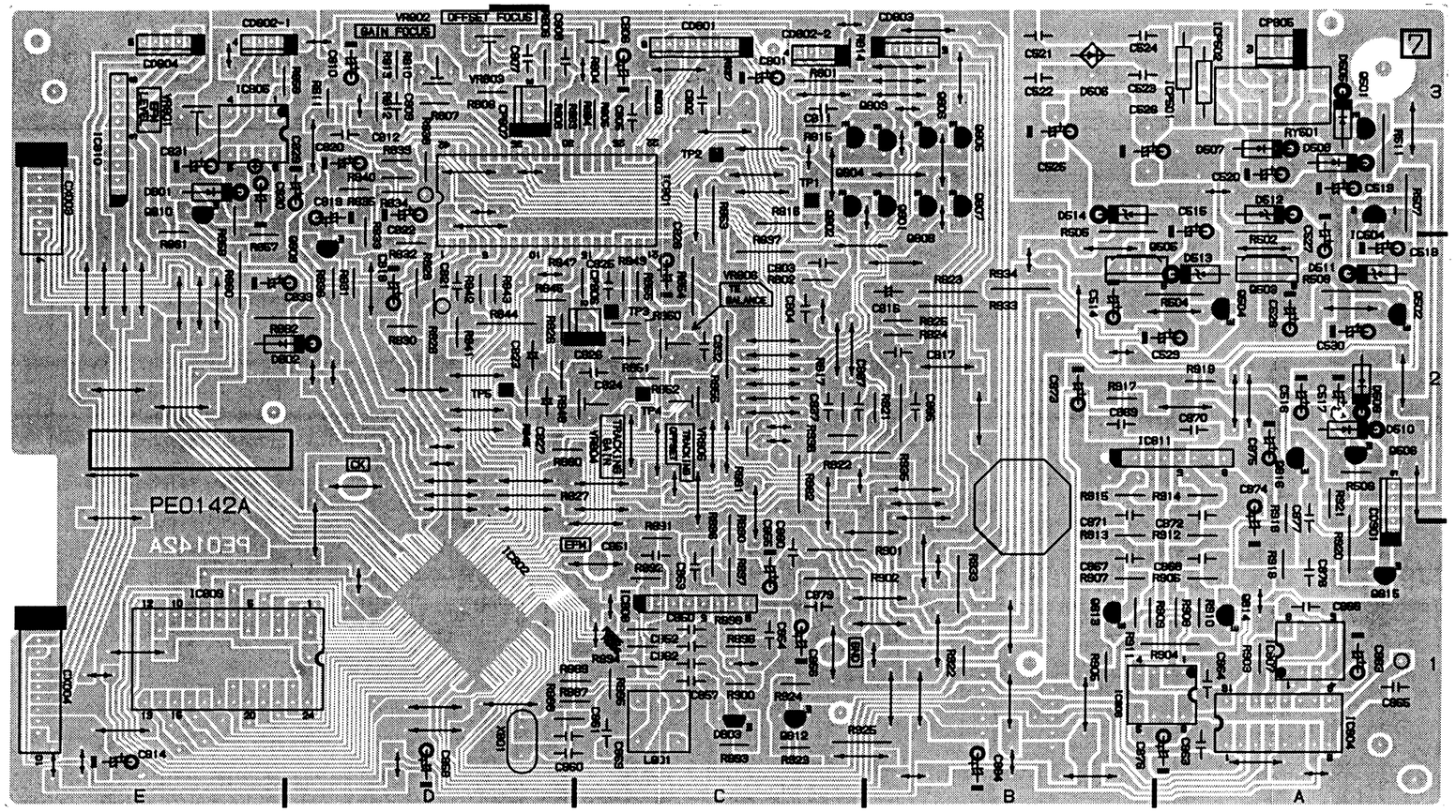


LED P.C.BOARD

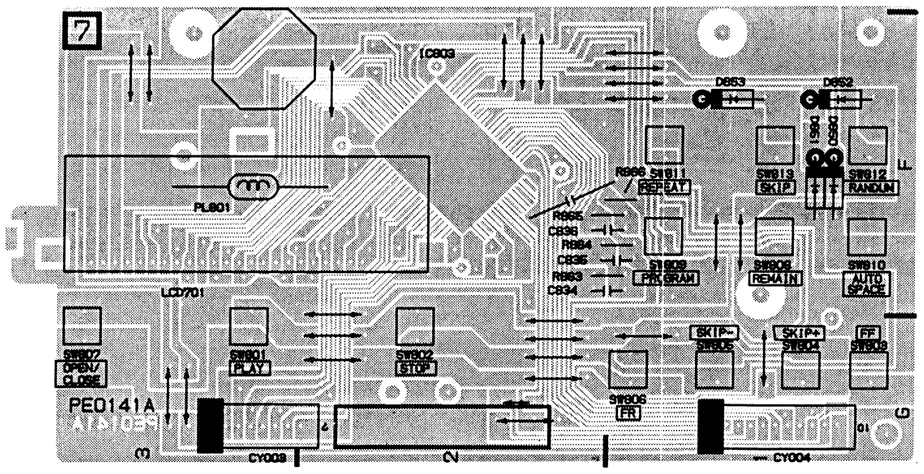
POWER SWITCH P.C.BOARD



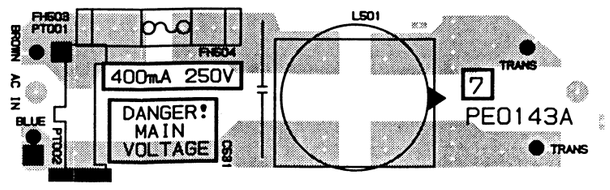
CD DECORDER P.C.BOARD



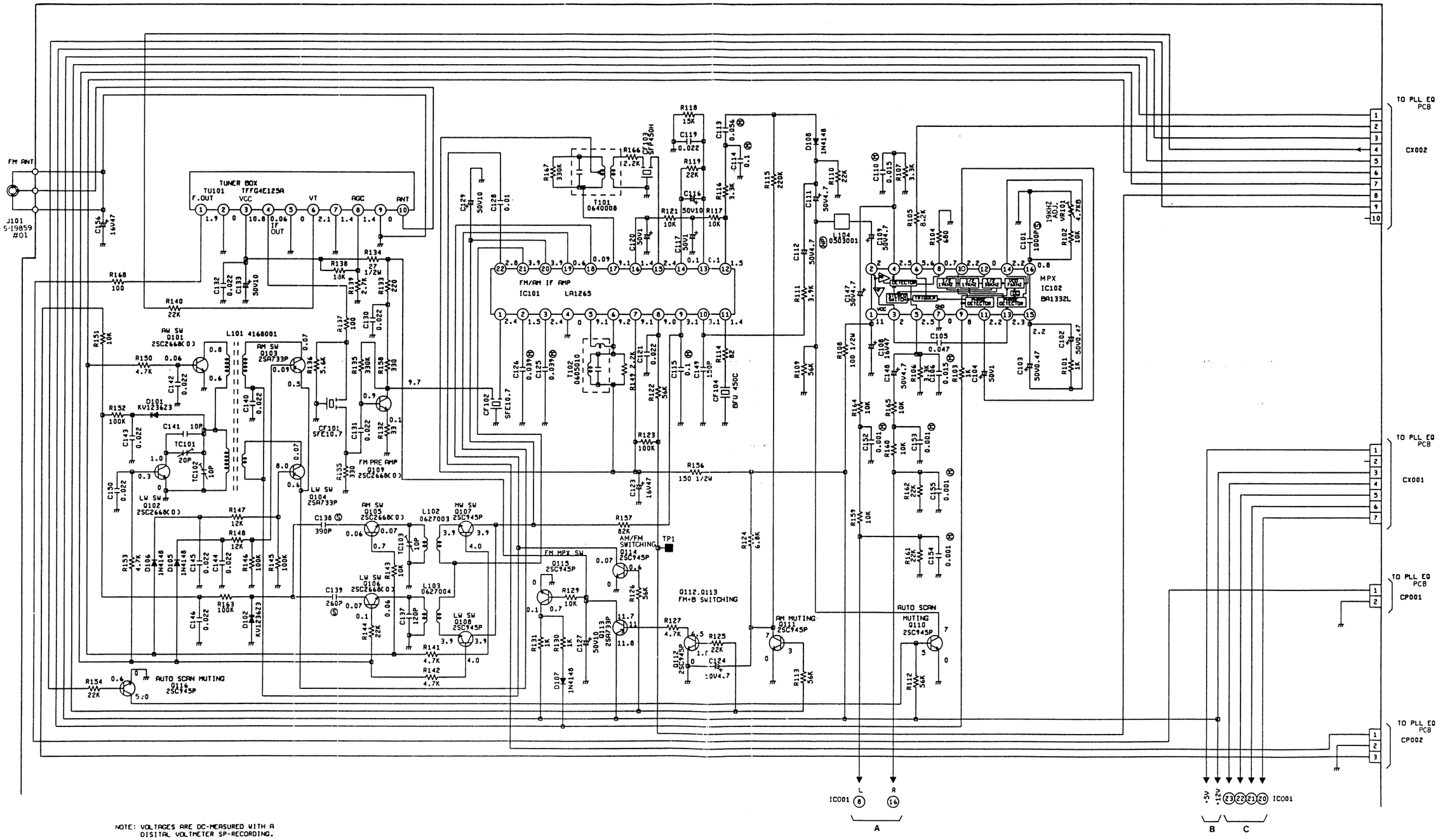
CD CONTROL P.C.BOARD



FILTER P.C.BOARD



MAIN SCHEMATIC DIAGRAM 1



NOTE: VOLTAGES ARE DC-MEASURED WITH A DISITAL VOLTMETER SP-RECORDING.

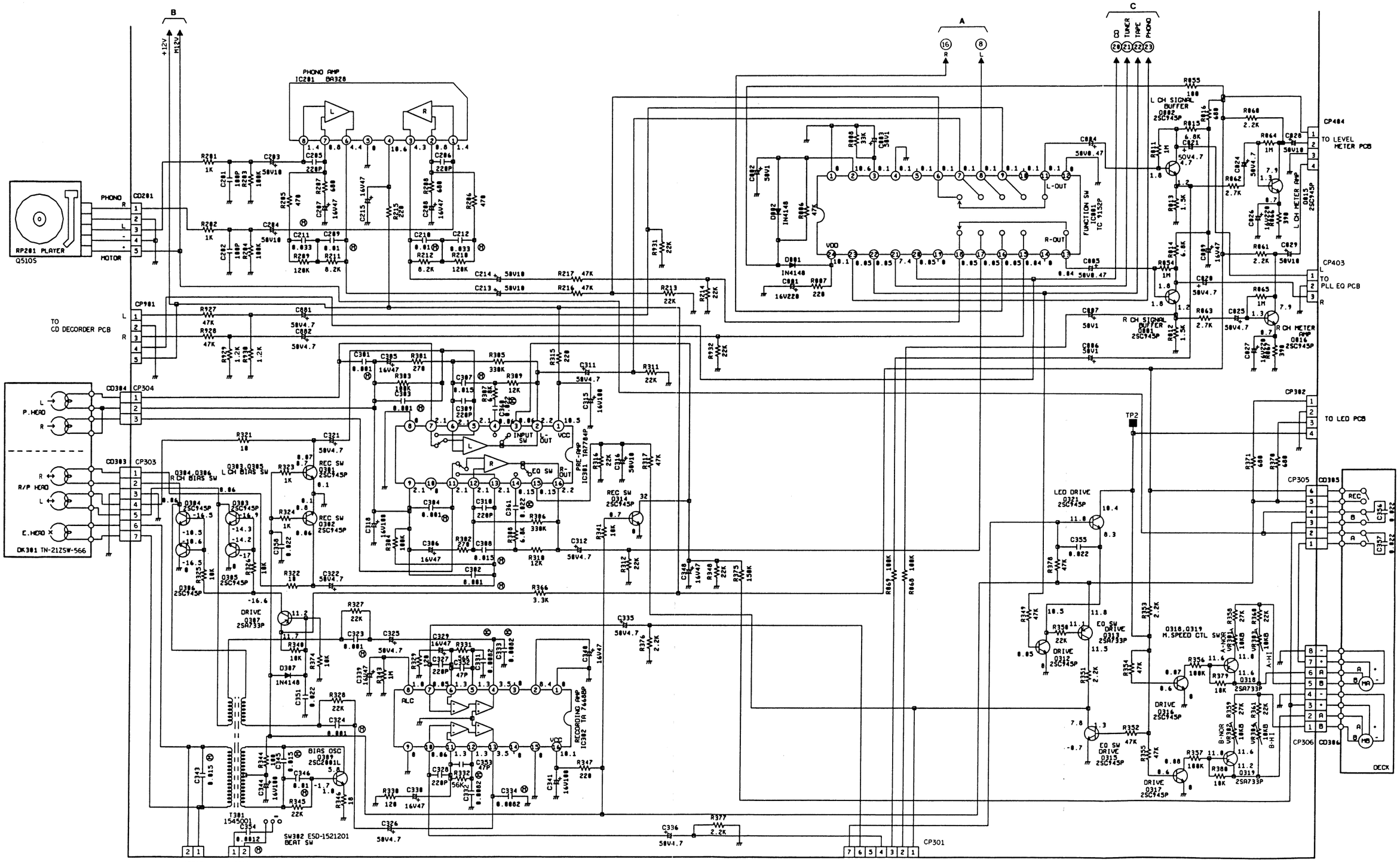
NOTE: WHERE VOLTAGE DIFFERS BETWEEN SP-RECORDING AND SP-PLAYBACK, THE VOLTAGE DURING SP-PLAYBACK IS SHOWN IN PARENTHESES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

MAIN SCHEMATIC DIAGRAM 1

1-8616

MAIN SCHEMATIC DIAGRAM 2



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MAIN SCHEMATIC DIAGRAM 2

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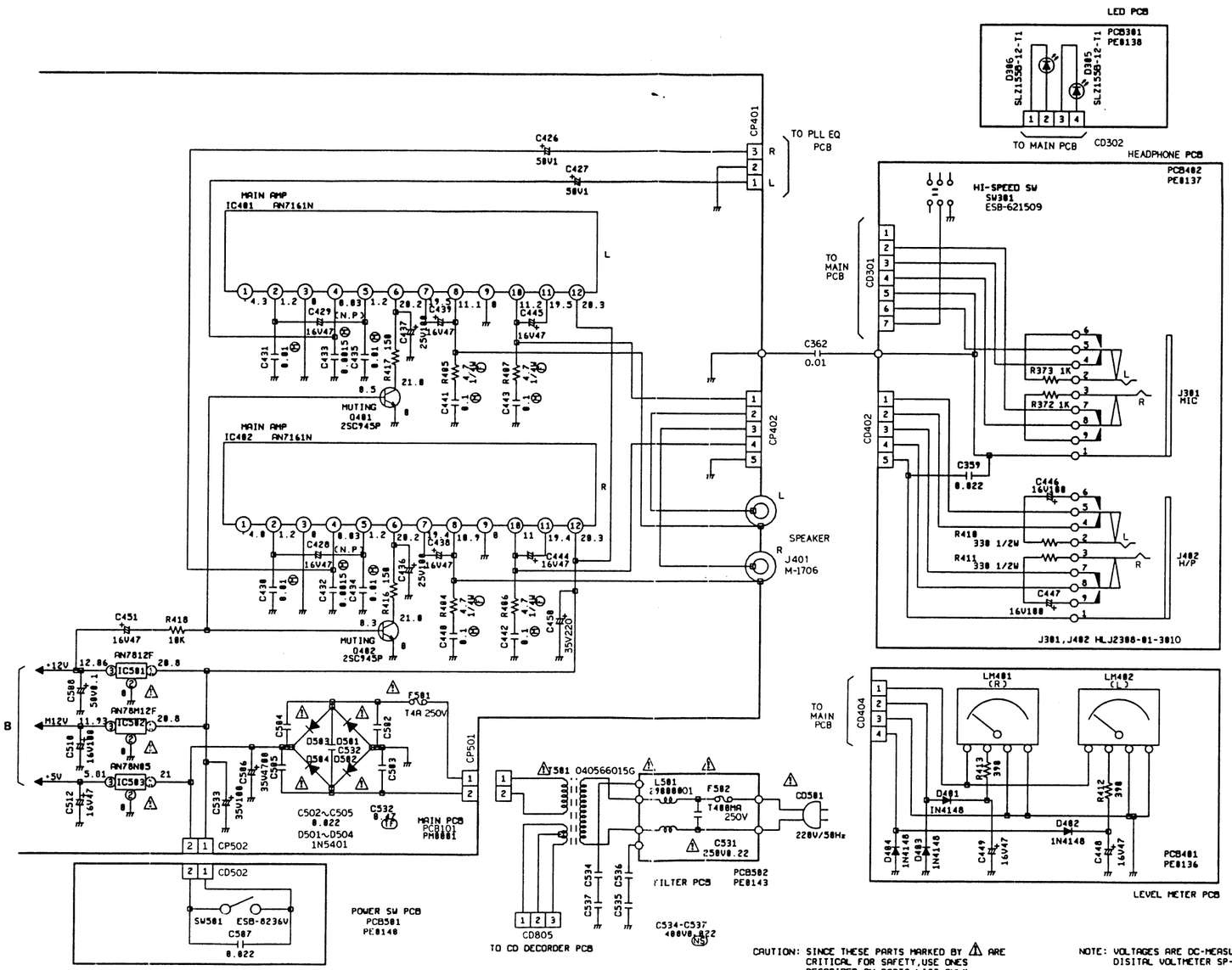
MAIN/LED/LEVEL METER/HEADPHONE/ POWER SWITCH/FILTER SCHEMATIC DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

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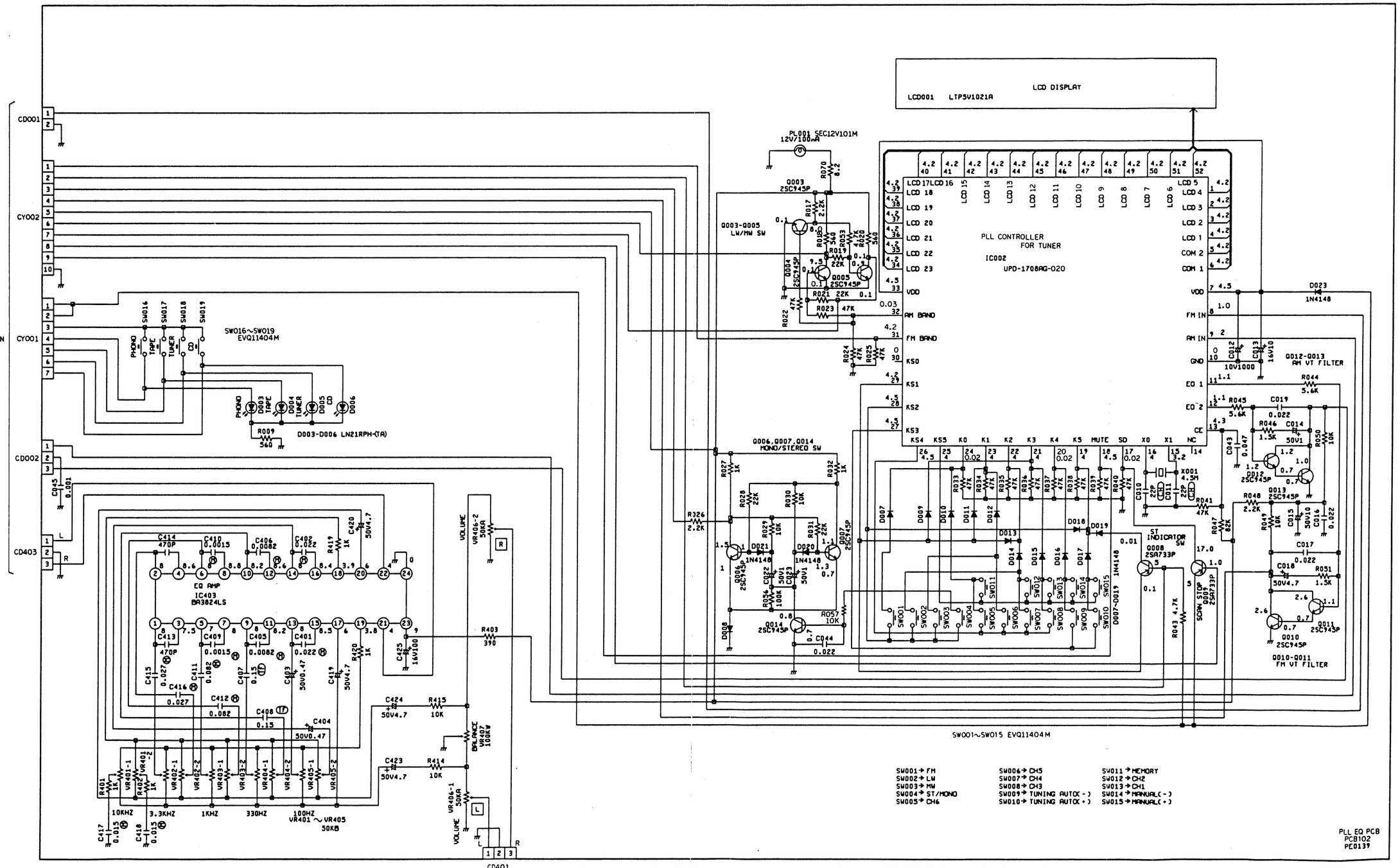
MAIN/LED/LEVEL METER/HEADPHONE/ POWER SWITCH/FILTER SCHEMATIC DIAGRAM

1-8618

PLL EQ SCHEMATIC DIAGRAM



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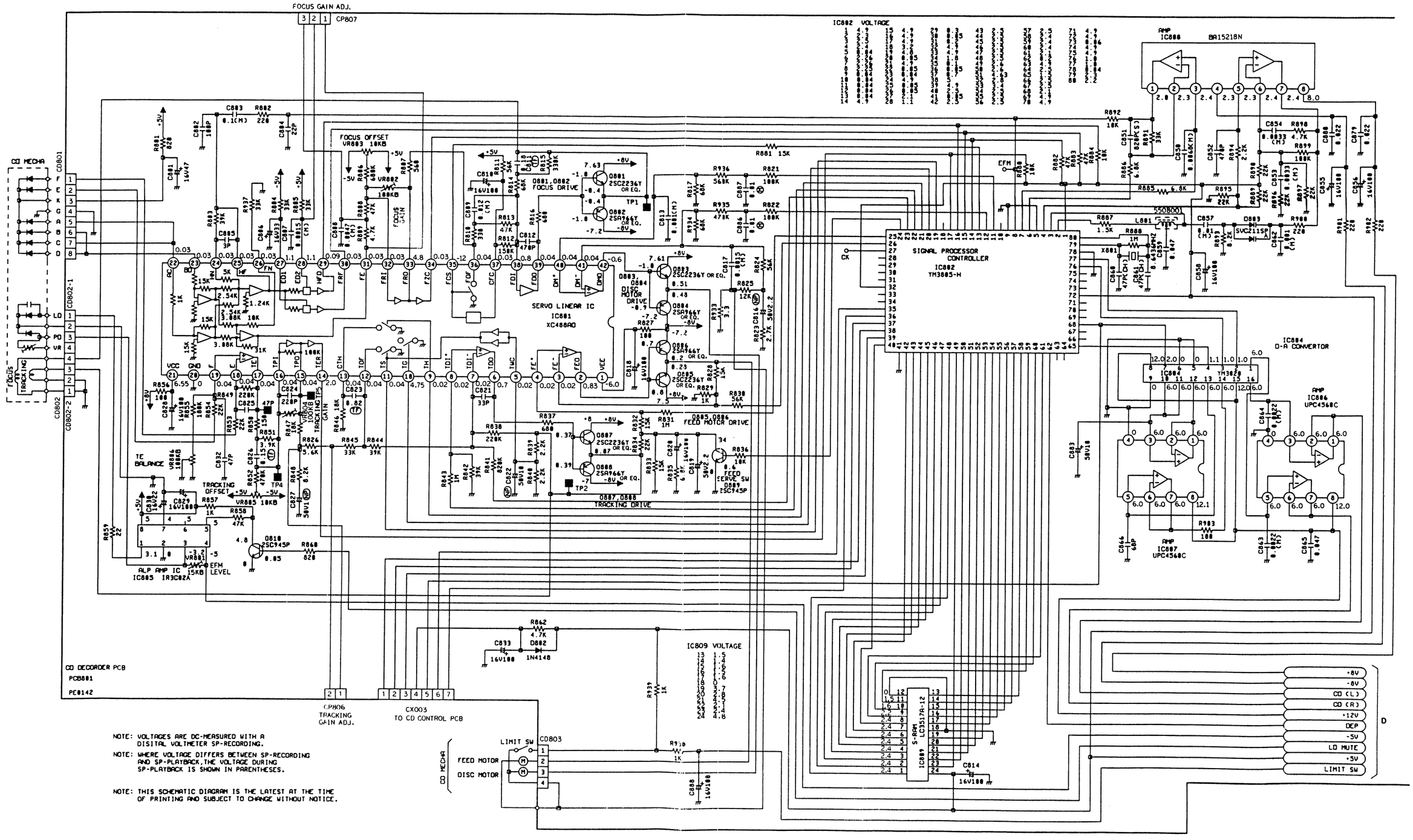
PLL EQ SCHEMATIC DIAGRAM

1-8619

CD DECORDER SCHEMATIC DIAGRAM 1



NOTE: VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLTMETER SP-RECORDING.

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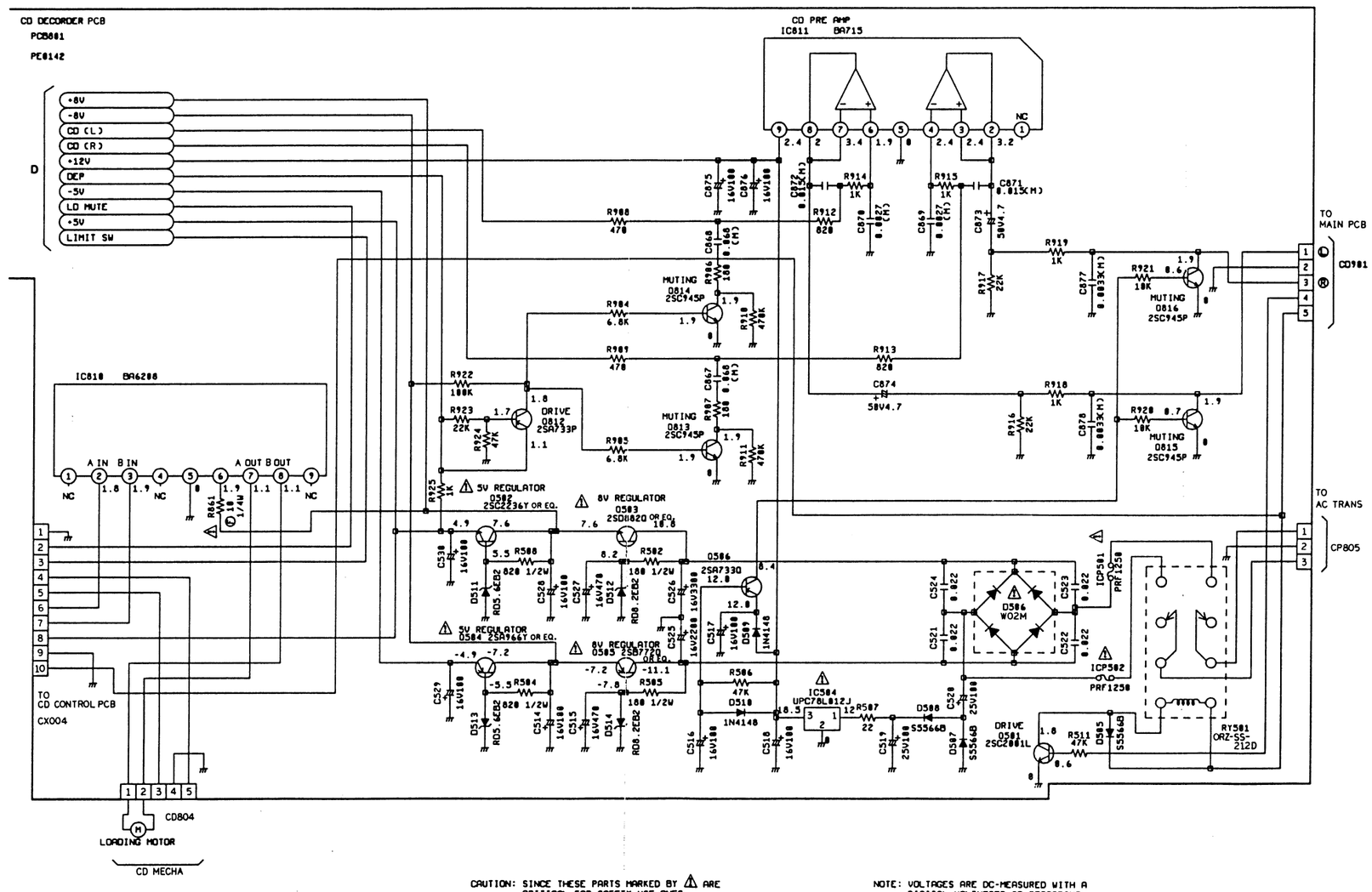
CD DECORDER SCHEMATIC DIAGRAM 1

1-8620

CD DECORDER SCHEMATIC DIAGRAM 2



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CD DECORDER SCHEMATIC DIAGRAM 2

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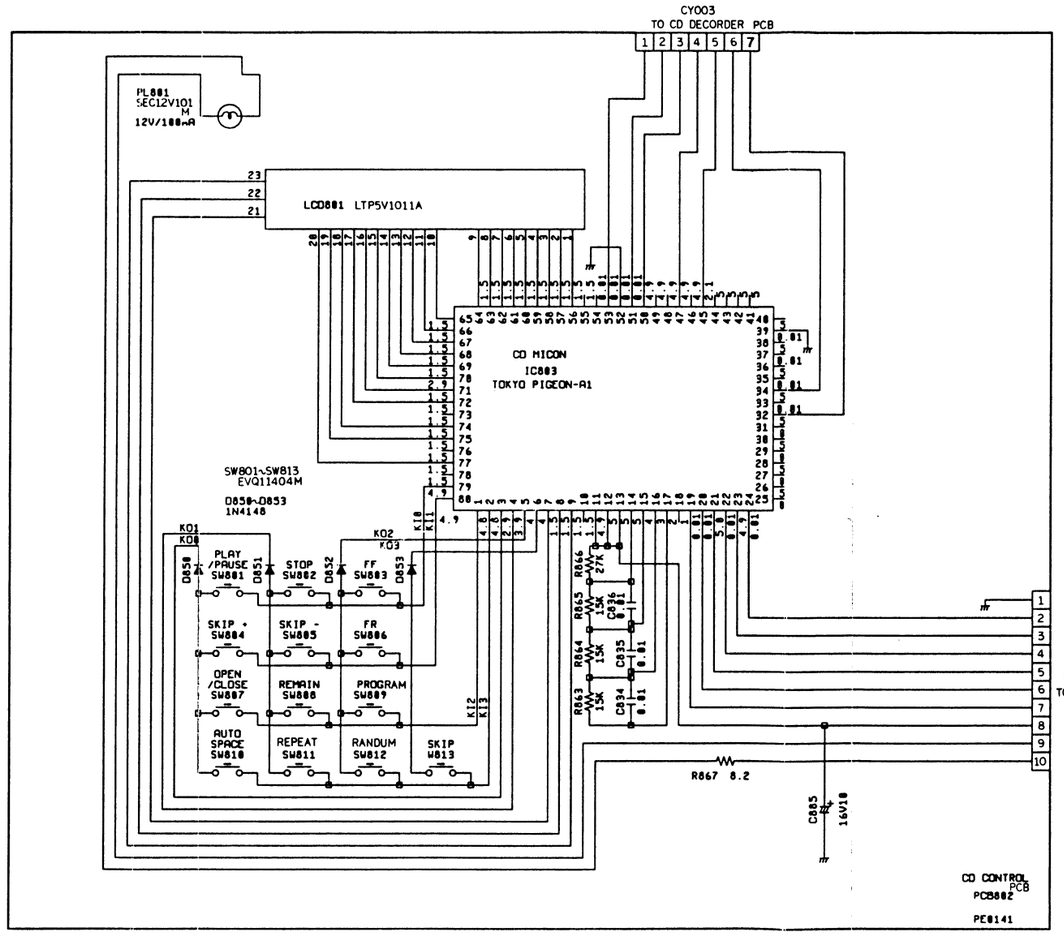
CD CONTROL SCHEMATIC DIAGRAM



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CD CONTROL SCHEMATIC DIAGRAM

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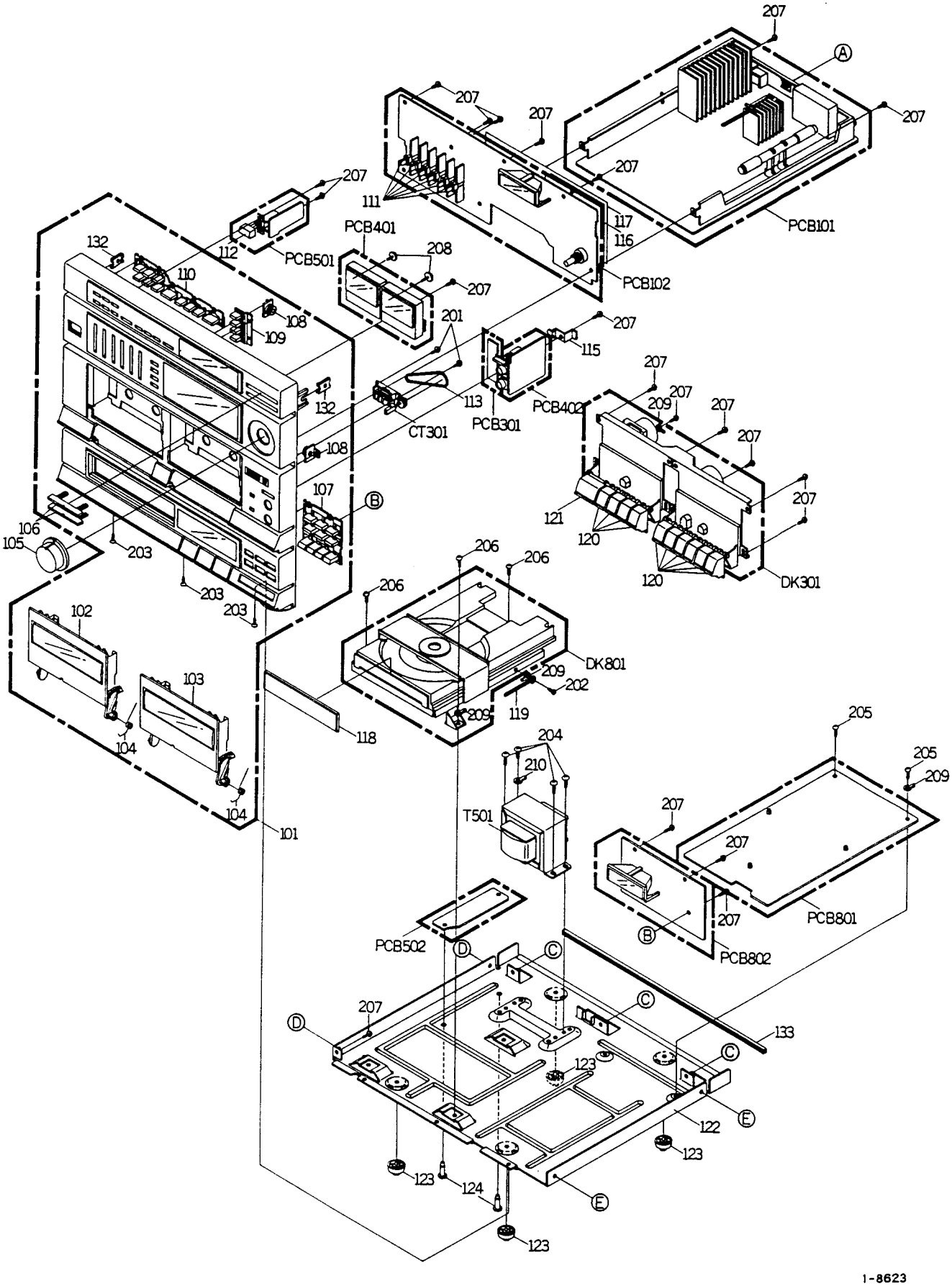
MECHANICAL EXPLODED VIEW



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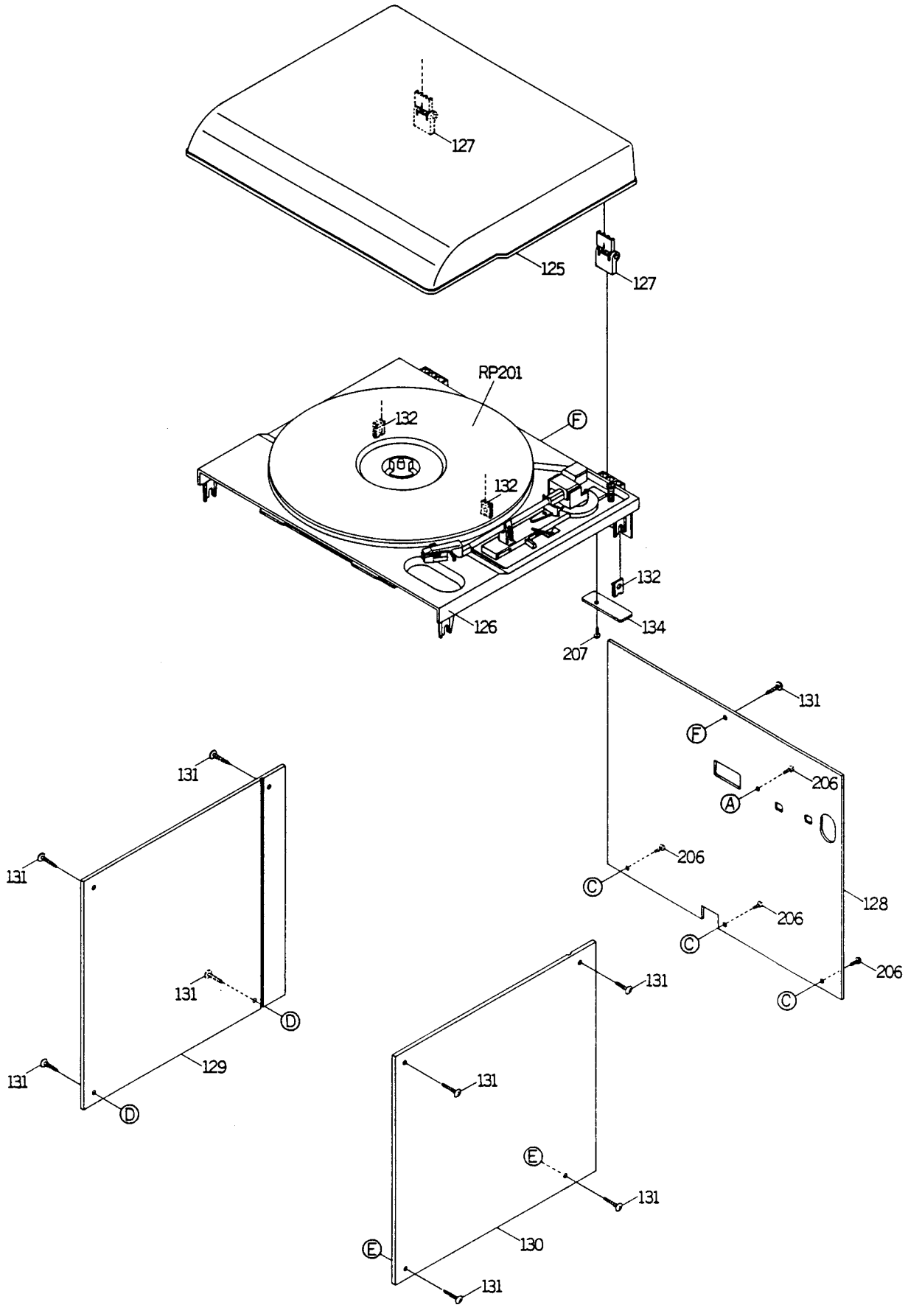
MECHANICAL EXPLODED VIEW



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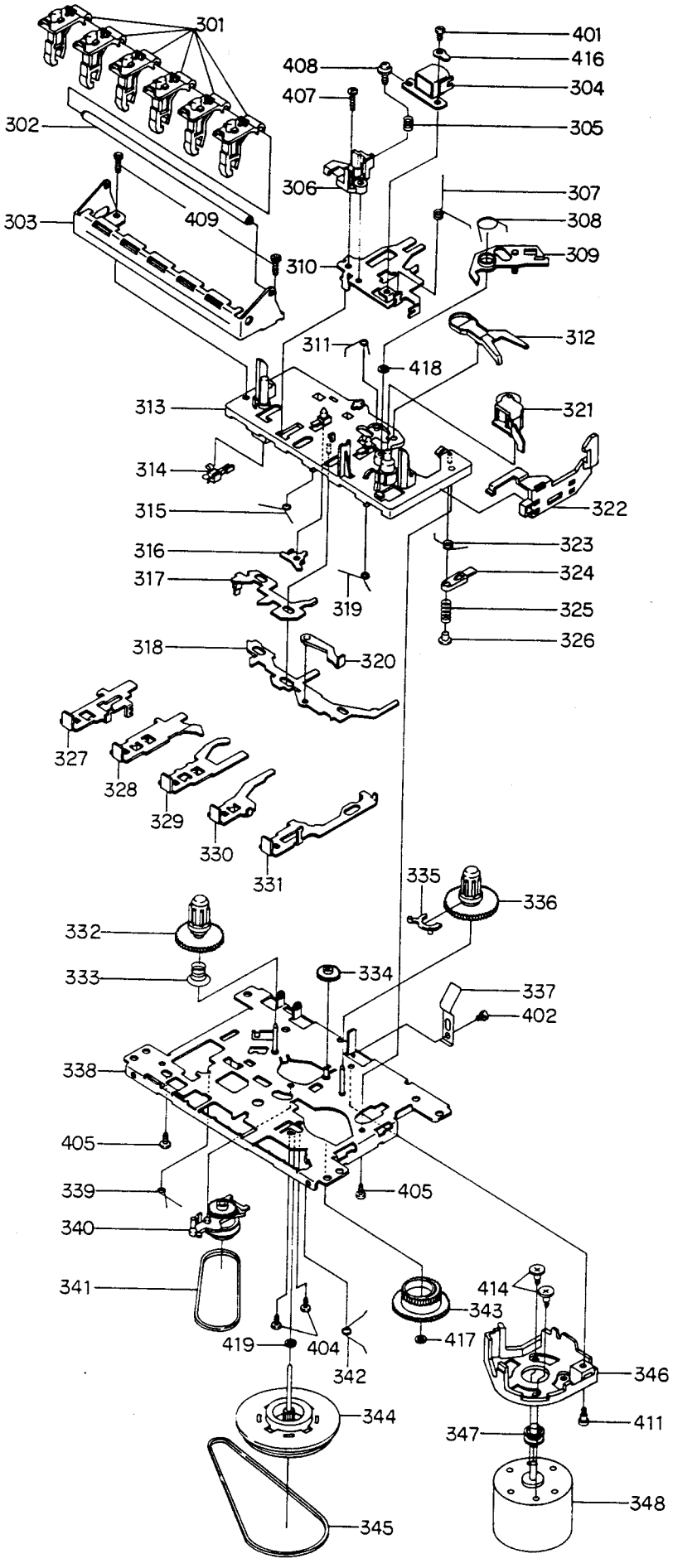
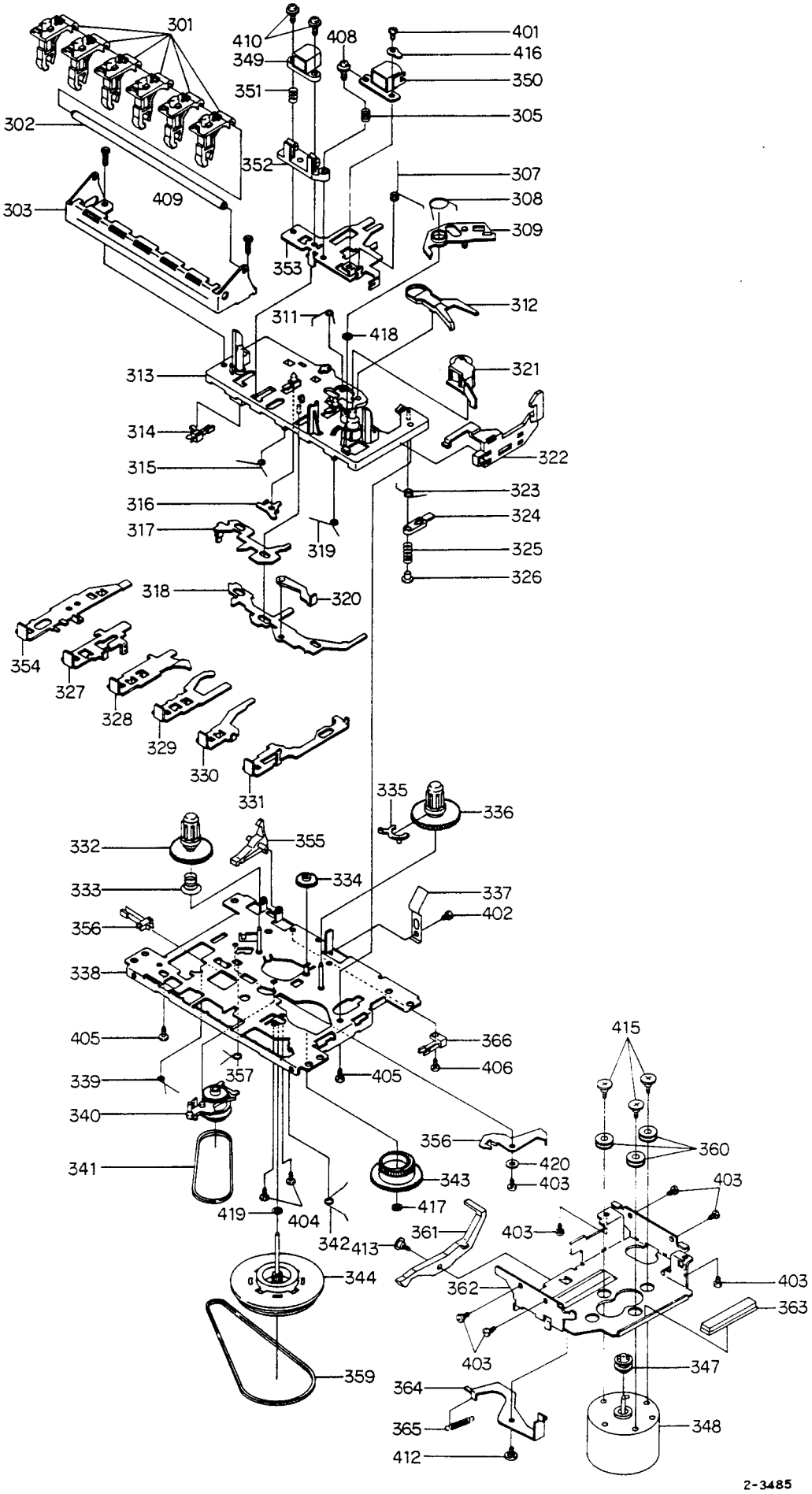
DECK EXPLODED VIEW A

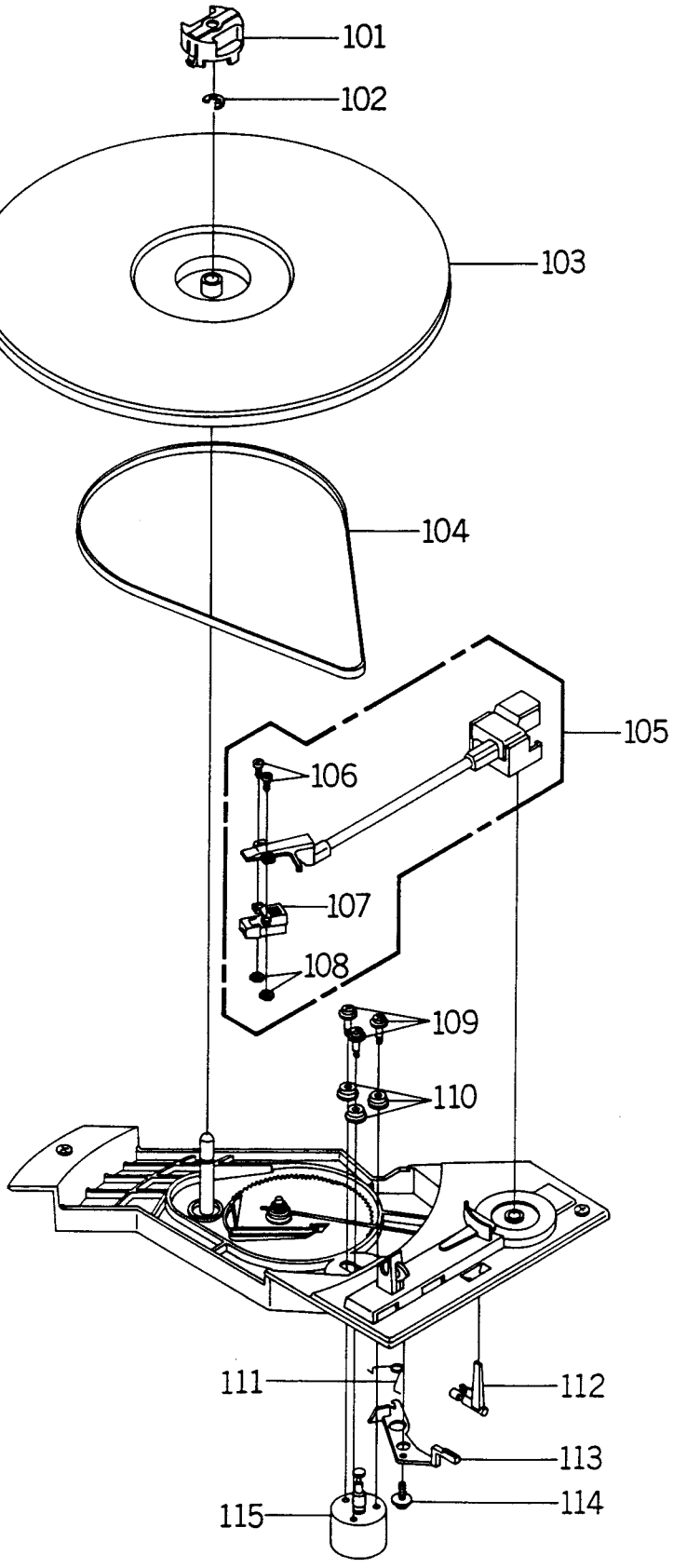


2-3484

DECK EXPLODED VIEW B

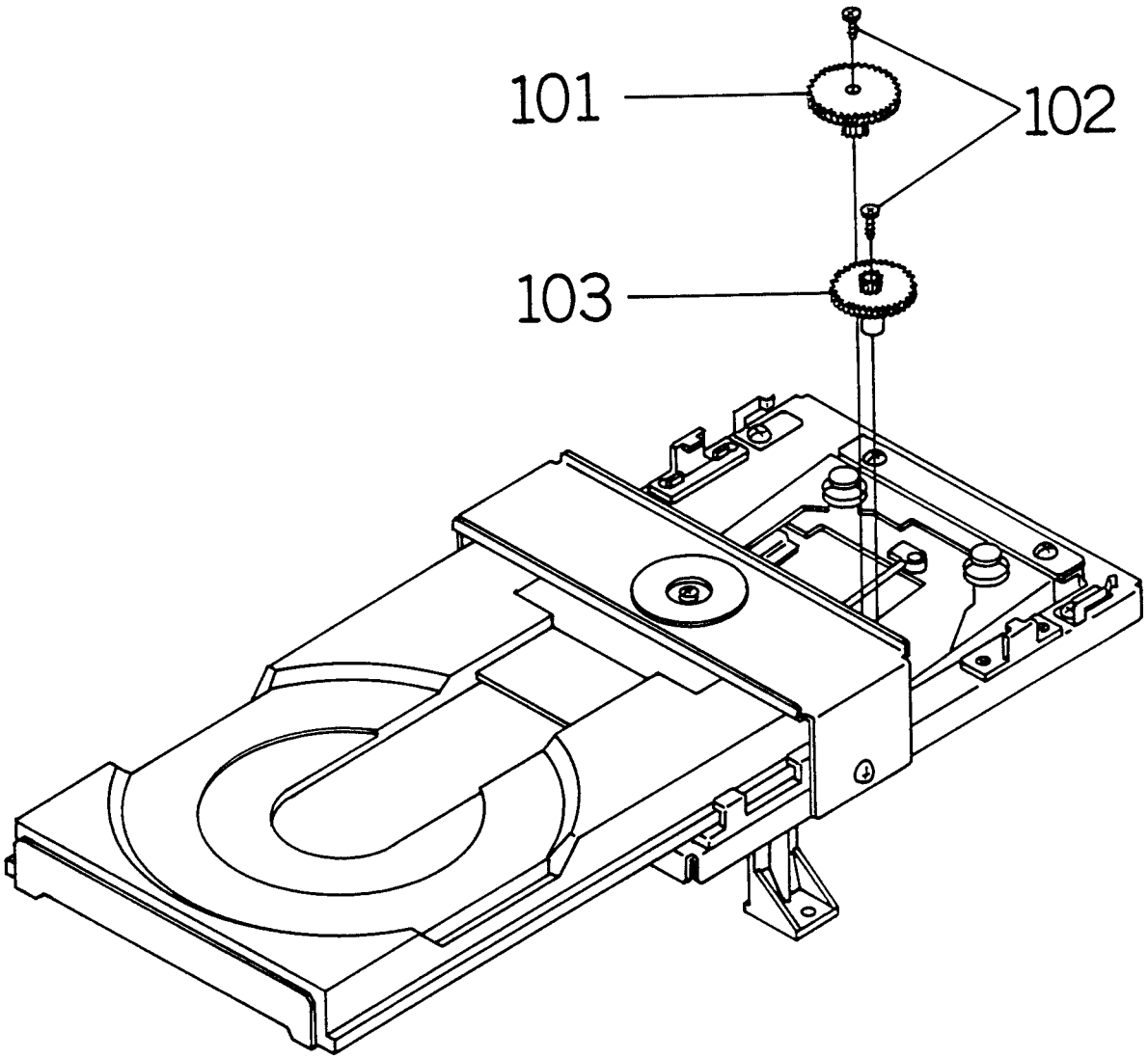


PLAYER MECHANICAL EXPLODED VIEW



* THE PARTS EXCEPT REF. NO. CANNOT BE PROVIDEB.

CD MECHANICAL EXPLODED VIEW



✳ THE PARTS EXCEPT REF. NO. CANNOT BE PROVIDEB.

4-2494

MECHANICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	
101	A10801A720	CABINET,FRONT ASS'Y	
102	712WPJ0009	LID,CASSETTE(A)	
103	712WPJ0010	LID,CASSETTE(B)	
104	743TUA0001	SPRING,LID CASSETTE	
105	731WPA0001	KNOB,VOLUME	
106	735WPA0009	BUTTON,TUNING	
107	735WPA0021	BUTTON,CD CONTROL	
108	89800JA250	GEAR DAMPER	
109	735WPA0008	BUTTON,FUNCTION	
110	735WPA0006	BUTTON,PRESET	
111	733WPA0001	KNOB,SLIDE	
112	735WPA0005	BUTTON,POWER	
113	879SRA0001	COUNTER BELT	
114	735WPA0011	BUTTON,DUBBING	
115	762WSA0002	BRACKET,PCB	
116	752JSA0285	SHIELD PAPER(1)	
117	752JSA0286	SHIELD PAPER(2)	
118	712WPJ0008	DOOR,CD	
119	899PEC0340	CORD CLAMP NO.PEC-034-0	
120	730WPA0009	BUTTON,CASSETTE(A)	
121	730WPA0010	BUTTON,CASSETTE(B)	
122	761WSA0001	CHASSIS,BOTTOM	
123	89100FF008	LEG	
124	890KGLS14R	LOCKING CARD SPACER	
125	706WPA0001	DUST COVER	
126	706WPA0002	PLAYER BASE	
127	8980040866	CLICK HINGE	
128	702WWD0001	BACK,BOARD	
129	702WWV0002	SIDE,BOARD(L) SHEET,RATING SHEET,WARNING(A)	
130	702WWV0001	SIDE,BOARD(R)	
131	788TSE0006	SPECIAL SCREW	
132	83USN40040	USN 4004	
133	899CE01200	EDGING	
134	755WPA0001	PLATE,PLAYER BASE	
201	8110626804	TAP TITE(P)	2.6*8 CH
202	8107226604	TAP TITE(S) BIND	2.6*6 CH
203	8107330804	TAP TITE(S)	3*8 CH
204	8107540604	TAP TITE(S)	4*6 CH
205	8107630604	TAP TITE(S) BRAZIER	3*6 CH
206	8107630804	TAP TITE(S) BRAZIER	3*8 CH
207	8110630804	TAP TITE(P) BRAZIER	3*8 CH
208	8117F30804	TAPPING(BO) WH12	3*8 CH
209	901A040000	EARTH LUG(A4)	3.2
210	901B060000	EARTH LUG(B6)	4.2
---	J1080101A	INSTRUCTION BOOK	
---	J1080102A	WARRANTY CARD	
---	792WHA0025	PACKAGE(R)	
---	792WHA0026	PACKAGE(L)	
---	792WHA0027	PACKAGE(TOP)	
---	793WCD0044	GIFT BOX	

DECK REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	REF.NO	PART NO	DESCRIPTION
301	19211470	BASE	350		R.P.HEAD RP-7442CS-0951
302	18293103	BUTTON LEVER SHAFT	351	18210308	EH SPRING
303	18213106	BUTTON FRAME(S)	352	19210306	HEAD BASE
304		P.HEAD P-7442CS-0953	353	19210302	HEAD PANEL
305	18210307	AZIMUTH SPRING	354	19211422	REC BUTTON LEVER
306	19210304A	HEAD BASE	355	18211069	RECORD SAFETY LEVER
307	19210303	PANEL P SPRING	356	640101161	LEAF SWITCH MSW-1782 OMVDO
308	19212605	GEAR PLATE SPRING	357	19211421	REC BUTTON LEVER SPRING
309	192126501	GEAR PLATE ASS'Y	358	19210201	RECORD ARM
			359	18211222	MAIN BELT
310	19210301	HEAD PANEL			
311	19211418	M CONTROL SPRING	360	18201306	MOTOR RUBBER
312	19212604	SENSING LEVER	361	19211209	P KICK LEVER(B)
313	192114301	BASE ASS'Y	362	19211211	MOTOR BRACKET
314	640101149	LEAF SWITCH MSW-1541T	363	19211212	ANTI VIBRATION FELT MAT
315	19211414	BUTTON LEVER SPRING(A)	364	18211268	P KICK LEVER(A)
316	19211420	PR STOPPER	365	18211225	P KICK LEVER SPRING
317	19211409	SWITCH ACTUATOR	366	64010138	LEAF SWITCH MSW-1275
318	19211408	PUSH BUTTON ACTUATOR			
319	19211415	BUTTON LEVER SPRING(B)	401	91150000	⊕ BIND SCREW M2*3
			402	91790000	C TAPPING SCREW M2*3
320	182101159	E KICK LEVER	403	91800000	C TAPPING SCREW M2*4
321	192104301	PINCH ROLLER ARM ASS'Y	404	99991809	TAPPING SCREW(CAMERA) M2*4.5
322	19211302	EJECT SLIDE LEVER	405	96790000	P TAPPING BING SCREW M2*5
323	19211413A	P CONTROL SPRING	406	91810000	C TAPPING SCREW M2*5
324	19211455	PAUSE LEVER(E)	407	90040000	SCREW M2*6
325	19211412	PAUSE LEVER SPRING	408	99220000	AZIMUTH SCREW M2*7
326	19211411	PAUSE STOPPER	409	99991402	S TAPPING SCREW(CAMERA) M2*8
327	19211423	PLAY BUTTON LEVER			
328	19211424	REW BUTTON LEVER	410	98210000	⊕⊖ CAP SCREW M2*8
329	19211425	FF BUTTON LEVER	411	19211203	MB SCREW
			412	18211223	PK COLLER SCREW(A)
330	19211426	STOP BUTTON LEVER	413	18211224	PK COLLER SCREW(B)
331	19211463	PAUSE BUTTON LEVER	414	19211202	MOTOR COLLER SCREW
332	192105304	SUPPLY REEL ASS'Y	415	18211202	MOTOR COLLER SCREW
333	18291010	BACK TENSION SPRING	416	94800000	B3 LUG PLATE 2.0
334	18211070	FF GEAR	417	94220000	P WASHER CUT 1.2*3.8*T0.3
335	19210506	SENSOR	418	99990313	P WASHER CUT 1.45*3.8*T0.5
336	192105303	TAKE UP REEL ASS'Y	419	97860000	P WASHER 2*3.5*T0.3
337	18291001	PACK SPRING	420	19211437	P ARM COLLER
338	192101501	CHASSIS ASS'Y			
339	19211417	P.S.LEVER SPRING			
340	192107302	RF CLUTCH ASS'Y			
341	19210703	RF BELT			
342	19211416	E ACTUATOR SPRING			
343	19212602	CAM GEAR			
344	192109304	FLYWHEEL ASS'Y			
345	182112138	MAIN BELT			
346	19211204	MOTOR BRACKET			
347	19211226	MOTOR PULLEY			
348		MOTOR EG-530KD-28			
349		E.HEAD E-621ML-0201			

PLAYER REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
101	1072000500	T/T ADAPTOR
102	3130000060	E-RING 6
103	1001103664	TURNTABLE
104	2020000500	TURNTABLE BELT
105	0003103665	PICK UP ARM ASS'Y
106	8241260800	2-BID 2608 ZN3A
107	1034000289	CARTRIDGE ASS'Y(AT-3600L)
108	3031200026	NUT 26 ZN3A
109	2015000284	SCREW
110	2065100278	GROMMET(A)
111	2023075410	SPEED SHIFT CAM SPRING
112	1005100500	CUE LEVER
113	1006100500	SPEED SHIFT CAM 33
114	876130081C	7-CUP 3008 WF10 ZN3A
115	4022141100	DC MOTOR(SHE2R53)

CD REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION
101	2641404(02)	GEAR(A)
102	3303809(31)	SCREW M1.7*3
103	2641403(06)	GEAR(B)

THE PLAYER AND CD PARTS EXCEPT ABOVE CANNOT BE PROVIDED.

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO	PART NO	DESCRIPTION	
SEMICONDUCTORS (CONT)			
⚠ Q505	TBL000772Q	TRANSISTOR,SILICON	2SB772Q
Q506	TALT00733O	TRANSISTOR,SILICON	2SA733(C)-T
Q801	TCUT02236Y	TRANSISTOR,SILICON	2SC2236Y
Q802	TAUT00966Y	TRANSISTOR,SILICON	2SA966Y
Q803	TCUT02236Y	TRANSISTOR,SILICON	2SC2236Y
Q804	TAUT00966Y	TRANSISTOR,SILICON	2SA966Y
Q805	TCUT02236Y	TRANSISTOR,SILICON	2SC2236Y
Q806	TAUT00966Y	TRANSISTOR,SILICON	2SA966Y
Q807	TCUT02236Y	TRANSISTOR,SILICON	2SC2236Y
Q808	TAUT00966Y	TRANSISTOR,SILICON	2SA966Y
Q809	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
Q810	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
Q812	TALT00733P	TRANSISTOR,SILICON	2SA733(C)-T P
Q813	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
Q814	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
Q815	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
Q816	TCLT00945P	TRANSISTOR,SILICON	2SC945A(C)-T P
COILS & TRANSFORMERS			
L101	0341680017	COIL,BAR ANTENNA	4168001
L102	0306270035	COIL,MW OSC	0627003
L103	0306270045	COIL,LW OSC	0627004
L104	0305030015	COIL,MPX FILTER	0503001
⚠ L501	0291000010	COIL,LINE FILTER	29000001
L502	02AU80A0A1	CORE,FERRITE	TR-20-10-10
L801	0355080015	COIL,OSC	5508001
T101	0306400085	COIL,AM IFT	0640008
T102	0306050105	COIL,FM IFT	0605010
T301	0315450015	COIL,BIAS OSC	1545001
⚠ T501	0405660156	TRANSFORMER,POWER AC	0405660156
JACKS			
J101	0624000004	JACK,ANTENNE	S-19859 #01
J301	0602031002	JACK,RCA	HLJ2308-01-3010
J401	062P640002	JACK,SPEAKER	M-1706
J402	0602031002	JACK,RCA	HLJ2308-01-3010
SWITCHES			
SW001	0504101T25	SWITCH,TACT	EVQ11404M
SW002	0504101T25	SWITCH,TACT	EVQ11404M
SW003	0504101T25	SWITCH,TACT	EVQ11404M
SW004	0504101T25	SWITCH,TACT	EVQ11404M
SW005	0504101T25	SWITCH,TACT	EVQ11404M
SW006	0504101T25	SWITCH,TACT	EVQ11404M
SW007	0504101T25	SWITCH,TACT	EVQ11404M
SW008	0504101T25	SWITCH,TACT	EVQ11404M
SW009	0504101T25	SWITCH,TACT	EVQ11404M
SW010	0504101T25	SWITCH,TACT	EVQ11404M
SW011	0504101T25	SWITCH,TACT	EVQ11404M
SW012	0504101T25	SWITCH,TACT	EVQ11404M
SW013	0504101T25	SWITCH,TACT	EVQ11404M
SW014	0504101T25	SWITCH,TACT	EVQ11404M
SW015	0504101T25	SWITCH,TACT	EVQ11404M
SW016	0504101T25	SWITCH,TACT	EVQ11404M
SW017	0504101T25	SWITCH,TACT	EVQ11404M
SW018	0504101T25	SWITCH,TACT	EVQ11404M
SW019	0504101T25	SWITCH,TACT	EVQ11404M
SW301	0500R01020	SWITCH,PUSH	ESB-621509
SW302	0510121002	SWITCH,SLIDE	ESD-1521201
SW501	0530102010	SWITCH,PUSH	ESB-8236V
SW801	0504101T25	SWITCH,TACT	EVQ11404M
SW802	0504101T25	SWITCH,TACT	EVQ11404M
SW803	0504101T25	SWITCH,TACT	EVQ11404M
SW804	0504101T25	SWITCH,TACT	EVQ11404M
SW805	0504101T25	SWITCH,TACT	EVQ11404M
SW806	0504101T25	SWITCH,TACT	EVQ11404M
SW807	0504101T25	SWITCH,TACT	EVQ11404M
SW808	0504101T25	SWITCH,TACT	EVQ11404M
SW809	0504101T25	SWITCH,TACT	EVQ11404M
SW810	0504101T25	SWITCH,TACT	EVQ11404M
SW811	0504101T25	SWITCH,TACT	EVQ11404M
SW812	0504101T25	SWITCH,TACT	EVQ11404M
SW813	0504101T25	SWITCH,TACT	EVQ11404M
VARIABLE RESISTORS			
VR101	V1163Q3BT2	VR,SEMIFIXED	EVNDXAA02BQ3
VR301	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14
VR302	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14
VR303	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14

REF.NO	PART NO	DESCRIPTION	
VARIABLE RESISTORS (CONT)			
VR304	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14
VR401	V2T3154B01	VR,SLIDE	SS302G00DB50K
VR402	V2T3154B01	VR,SLIDE	SS302G00DB50K
VR403	V2T3154B01	VR,SLIDE	SS302G00DB50K
VR404	V2T3154B01	VR,SLIDE	SS302G00DB50K
VR405	V2T3154B01	VR,SLIDE	SS302G00DB50K
VR406	V0A1154A01	VR,ROTARY	RK16K12D0019
VR407	V2T3115W01	VR,SLIDE	SS302N01DW100K
VR801	V1163E4BT2	VR,SEMIFIXED	EVNDXAA02BC4
VR802	V116315BT2	VR,SEMIFIXED	EVNDXAA02B15
VR803	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14
VR804	V116315BT2	VR,SEMIFIXED	EVNDXAA02B15
VR805	V116314BT2	VR,SEMIFIXED	EVNDXAA02B14
VR806	V116315BT2	VR,SEMIFIXED	EVNDXAA02B15
P.C. BOARDS ASS'Y			
PCB101	A10801A01A	PCB ASS'Y	PM0001
PCB102	A10801A12A	PCB ASS'Y	PE0139
PCB301	A10801A20A	PCB ASS'Y	PE0138
PCB401	A10801A13A	PCB ASS'Y	PE0136
PCB402	A10801A07A	PCB ASS'Y	PE0137
PCB501	A10801A34A	PCB ASS'Y	PE0140
PCB502	A10801A30A	PCB ASS'Y	PE0143
PCB801	A10801A11A	PCB ASS'Y	PE0142
PCB802	A10801A10A	PCB ASS'Y	PE0141
MISCELLANEOUS			
CD001	068122009A	CORD,EIS CONNECTOR	8122009A
CD002	068123009A	CORD,EIS CONNECTOR	8123009A
CD201	068125020A	CORD,EIS CONNECTOR	8125020A
CD301	068127021A	CORD,EIS CONNECTOR	8127021A
CD302	068124019A	CORD,EIS CONNECTOR	8124019A
CD303	068127019A	CORD,EIS CONNECTOR	8127019A
CD304	068123012A	CORD,EIS CONNECTOR	8123012A
CD305	068126018A	CORD,EIS CONNECTOR	8126018A
CD306	068128021A	CORD,EIS CONNECTOR	8128021A
CD307	068122010A	CORD,EIS CONNECTOR	8122010A
CD401	068113120A	CORD,EIS CONNECTOR	8113120A
CD402	068115030A	CORD,EIS CONNECTOR	8115030A
CD403	068123013A	CORD,EIS CONNECTOR	8123013A
CD404	068114231A	CORD,EIS CONNECTOR	8114231A
⚠ CD501	120S450023	CORD,AC	120S450023
CD502	068112238A	CORD,CONNECTOR	8112238A
CD503	068D01126A	CORD,CONNECTOR	8D01126A
CD801	068128020A	CORD,EIS CONNECTOR	8128020A
CD802	068128022A	CORD,EIS CONNECTOR	8128022A
CD803	068124016A	CORD,EIS CONNECTOR	8124016A
CD804	068125019A	CORD,EIS CONNECTOR	8125019A
CD805	068D01123B	CORD,CONNECTOR	8D01123B
CD901	068125018A	CORD,EIS CONNECTOR	8125018A
CF101	1012510R75	FILTER,CERAMIC	SFE10.7MS2-M
CF102	1012510R75	FILTER,CERAMIC	SFE10.7MS2-M
CF103	10127R4503	FILTER,CERAMIC	SFP450H
CF104	10127R4502	FILTER,CERAMIC	BFU450C4N
CP001	069X220119	CONNECTOR,PCB SIDE	B2B-PH-K
CP002	0694230129	CONNECTOR,PCB SIDE	173981-3
CP301	069X270119	CONNECTOR,PCB SIDE	B7B-PH-K
CP302	0694240129	CONNECTOR,PCB SIDE	173981-4
CP303	069X270119	CONNECTOR,PCB SIDE	B7B-PH-K
CP304	069X230119	CONNECTOR,PCB SIDE	B3B-PH-K
CP305	0694260129	CONNECTOR,PCB SIDE	173981-6
CP306	0694280129	CONNECTOR,PCB SIDE	173981-8
CP401	069S130066	CONNECTOR,PCB SIDE	2-172681-3
CP402	069S150066	CONNECTOR,PCB SIDE	2-172681-5
CP403	0694230276	CONNECTOR,PCB SIDE	2-175487-3
CP404	069S140066	CONNECTOR,PCB SIDE	2-172681-4
CP501	069X120229	CONNECTOR,PCB SIDE	B2B-XH-A
CP502	0694120099	CONNECTOR,PCB SIDE	171825-2
CP505	069X130229	CONNECTOR,PCB SIDE	B3B-XH-A
CP806	069S120019	CONNECTOR,PCB SIDE	171825-2
CP807	069S130019	CONNECTOR,PCB SIDE	171825-3
CP901	069X250119	CONNECTOR,PCB SIDE	B5B-PH-K
CT301	1580T03004	COUNTER,TAPE	T3SG100-100B1-709
CX001	0694270070	CONNECTOR,PCB SIDE	173992-7
CX002	06942A0070	CONNECTOR,PCB SIDE	1-173992-0
CX003	0694270070	CONNECTOR,PCB SIDE	173992-7
CX004	06942A0070	CONNECTOR,PCB SIDE	1-173992-0
CY001	0694270060	CONNECTOR,PCB SIDE	173991-7
CY002	06942A0060	CONNECTOR,PCB SIDE	1-173991-0
CY003	0694270060	CONNECTOR,PCB SIDE	173991-7

Schwalbe Service & Versand GmbH

Zentralwerkstatt und Ersatzteildepot für ORION- und ISP-Produkte

Postfach 101026
Max-Planck-Straße 20
6072 Dreieich
Telefon: (06103) 3999-77
Telex: d 4185274 ssv
Telefax: (06103) 3999-79

BTX-Anbieterseite: Leits. Nr. *20797 #
Rep. Abwicklung: (06103) 3999-97
ET-Bestellung: (06103) 3999-95
Techn. Auskunft (tägl. 10-12 Uhr):
Video/Camcorder (06103) 3999-62
TV/Audio (06103) 3999-66

Ersatzteilbestellungen auf Anrufbeantworter:
Montag – Donnerstag ab 17 Uhr,
Freitag ab 15.30 Uhr
und samstags
(06103) 3999-95

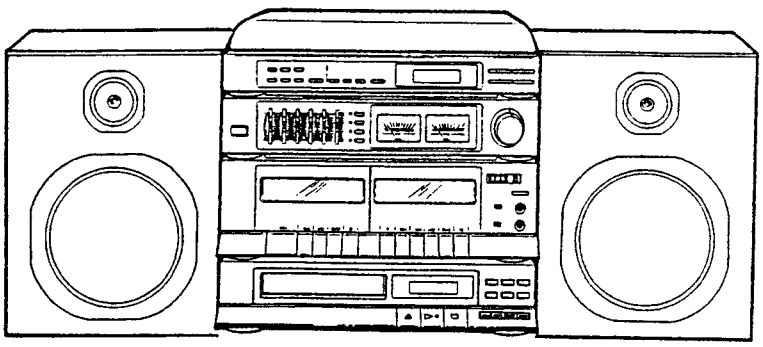
Service Manual

Nachdruck bzw. Kopieren dieser Unterlagen ist grundsätzlich verboten!

STEREO MIDI SYSTEM

ORION

MODEL MCD120



Bei technischen Änderungen können Ergänzungsblätter angefordert werden.

Specifications are subject to change without notice.

REVISION 2
CHASSIS CORD C

Bestell-Nr.:

4152

DIFFERENCES

Changing of CD MICON

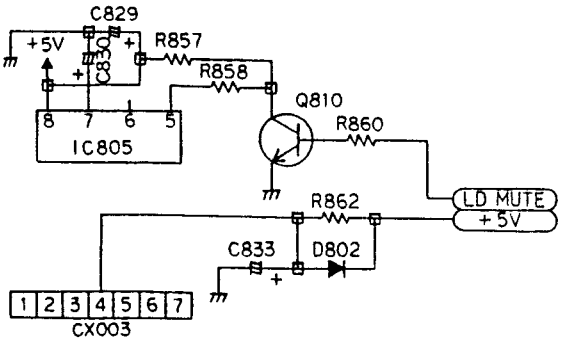
Ref.No	Chassis Cord A		Chassis Cord C	
	Part No	Description	Part No	Description
IC803	I5QF085440	IC TOKYO PIGEON-A1	I52F053080	IC OEC1018A
R857	R001T6102J	RC 1.0K OHM 1/6W		DEL.
R858	R001T6473J	RC 47K OHM 1/6W		DEL.
R860	R001T4821J	RC 820 OHM 1/4W		DEL.
R862	R001T4472J	RC 4.7K OHM 1/4W		DEL.
C833	E0E7T2101M	CE 100 UF 16V		DEL.
C834	C01TF0414Z	CC 0.01 UF 50V YF		DEL.
C835	C01TF0414Z	CC 0.01 UF 50V YF		DEL.
C836	C01TF0414Z	CC 0.01 UF 50V YF		DEL.
D802	D1VI041480	DIODE,SILICON 1N4148T-77		DEL.
Q810	TCLT00945P	TRANSISTOR,SILICON 2SC945A(C)-T P		DEL.
R860		———	R001T4472J	RC 4.7K OHM 1/4W
R862		———	R001T6223J	RC 22K OHM 1/6W
R868		———	R001T6223J	RC 22K OHM 1/6W
R869		———	R001T4223J	RC 22K OHM 1/4W
R870		———	R001T6102J	RC 1.0K OHM 1/4W
R871		———	R001T4223J	RC 22K OHM 1/4W
D802		———	D92T03R9B2	DIODE,ZENER RD3.9EB2 TA11R
Q817		———	TALT00733P	TRANSISTOR,SILICON 2SA733(C)-T P
C885	E0E7T2100M	CE 10 UF 16V	E0E7T5100M	CE 10 UF 50V
PCB801	A10801A11A	CD DECORDER PCB ASS'Y	A10801A11B	CD DECORDER PCB ASS'Y
PCB802	A10801A10A	CD CONTROL PCB ASS'Y	A10801A10B	CD CONTROL PCB ASS'Y

Changing of CD DECK

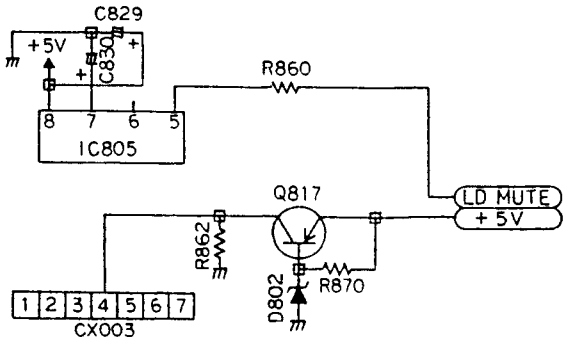
Ref.No	Chassis Cord A		Chassis Cord C	
	Part No	Description	Part No	Description
DK801	167S211201	DECK,CD KSL-150ACM3	167S211203	DECK,CD KSL-150BHM
CD803	068124016A	CORD,EIS CONNECTOR 8124016A	068124016B	CORD,EIS CONNECTOR 8124016B

CD DECORDER SCHEMATIC DIAGRAM

(CHASSIS CODE A)

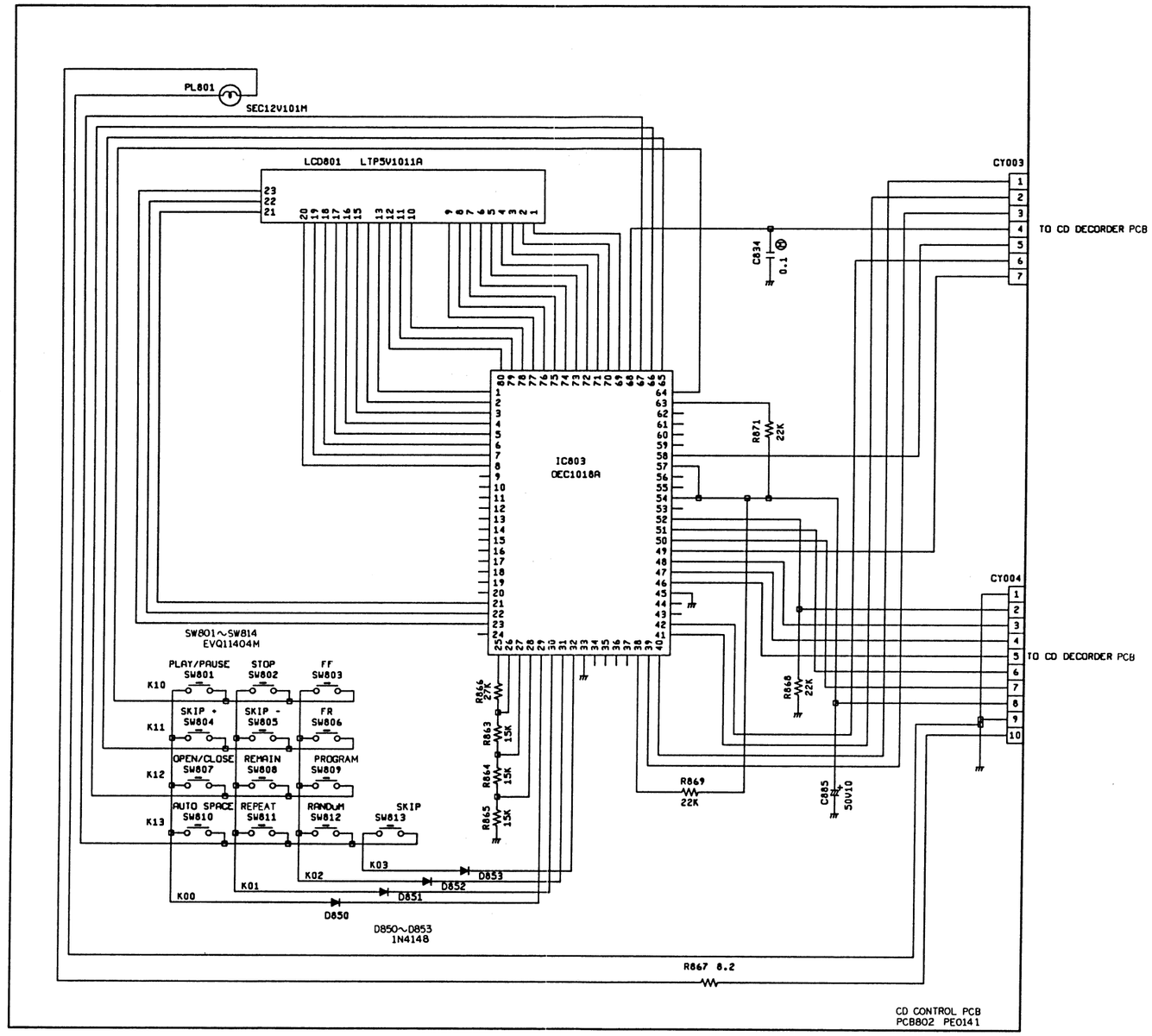


(CHASSIS CODE C)



CD CONTROL SCHEMATIC DIAGRAM

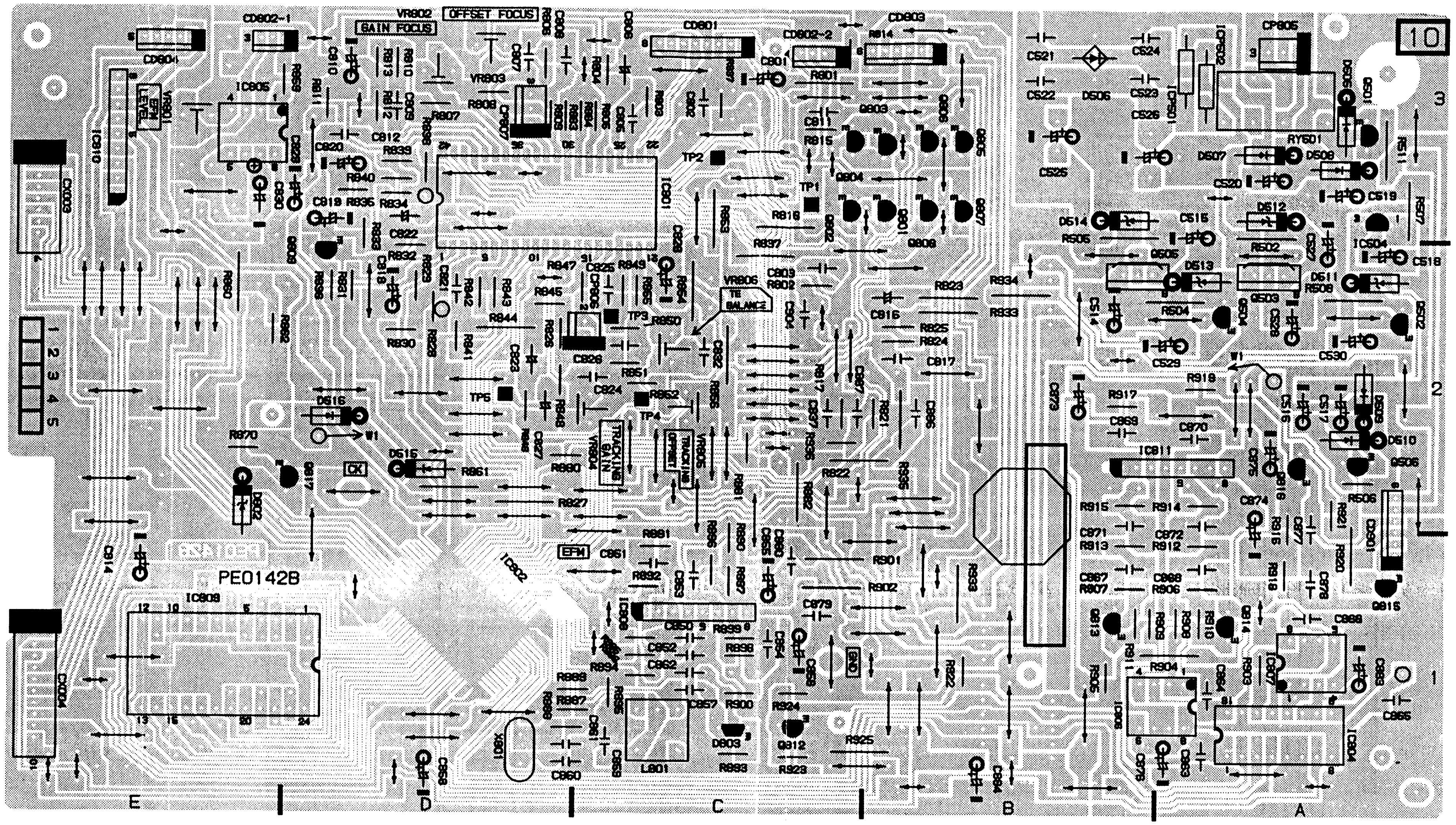
(CHASSIS CODE C)



CD CONTROL SCHEMATIC DIAGRAM

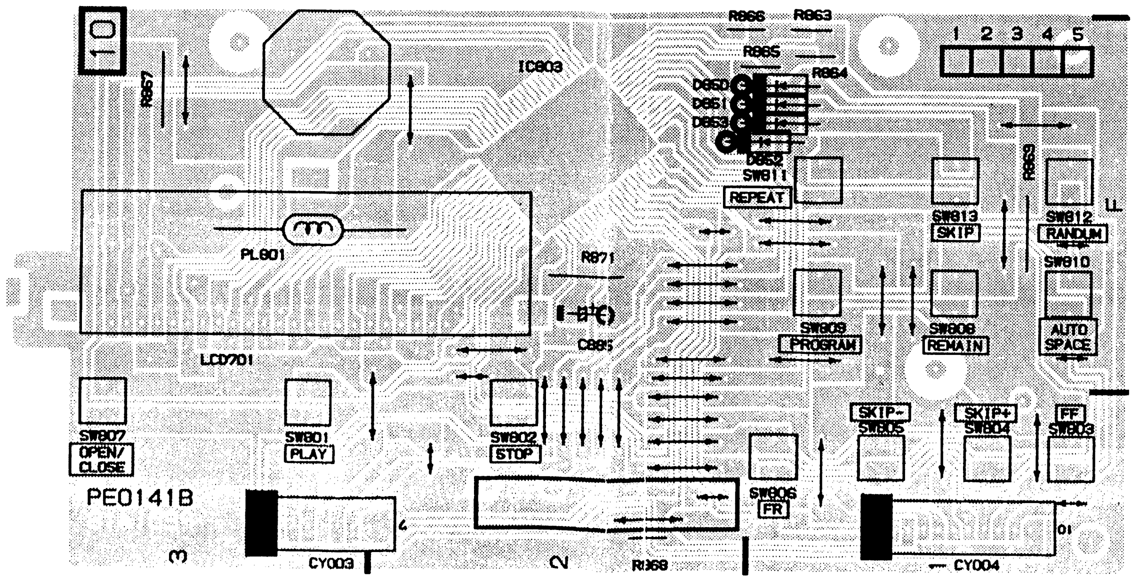
CD DECORDER P.C.BOARD

(CHASSIS CODE C)



CD CONTROL P.C.BOARD

(CHASSIS CODE C)



Supp

DIFFERENCES

Electrical improvement

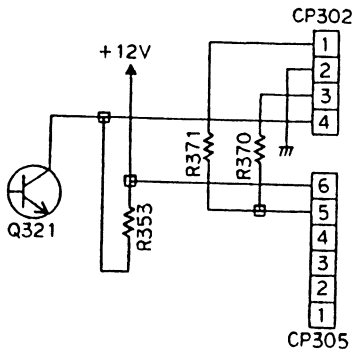
Ref.No	Chassis Cord A,B		Chassis Cord C	
	Part No	Description	Part No	Description
D308		———	D1VT041480	DIODE,SILICON 1N4148I-77
R018	R001I6561J	RC 560 OHM 1/6W	R001I6152J	RC 1.5K OHM 1/6W
R020	R001I6561J	RC 560 OHM 1/6W	R001I6152J	RC 1.5K OHM 1/6W
R027	R001I6102J	RC 1.0K OHM 1/6W	R001I6152J	RC 1.5K OHM 1/6W
R032	R001I6102J	RC 1.0K OHM 1/6W	R001I6152J	RC 1.5K OHM 1/6W
R327	R001I4223J	RC 22K OHM 1/4W	R001I4183J	RC 18K OHM 1/4W
R328	R001I4223J	RC 22K OHM 1/4W	R001I4183J	RC 18K OHM 1/4W
R811	R001I6563J	RC 56K OHM 1/6W	R001I6154J	RC 150K OHM 1/6W
R812	R001I6154J	RC 150K OHM 1/6W	R001I6683J	RC 68K OHM 1/6W
R929	R001I4122J	RC 1.2K OHM 1/4W	R001I4182J	RC 1.8K OHM 1/4W
R930	R001I4122J	RC 1.2K OHM 1/4W	R001I4182J	RC 1.8K OHM 1/4W
R937	R001I6333J	RC 33K OHM 1/6W	R001I6474J	RC 470K OHM 1/6W
C022	E0E7I5010M	CE 1 UF 50V	E0E7I52R2M	CE 2.2 UF 50V
C023	E0E7I5010M	CE 1 UF 50V	E0E7I52R2M	CE 2.2 UF 50V
C106	P1E4I0153J	CP 0.015 UF 50V	P1E4I0103J	CP 0.01 UF 50V
C110	P1E4I0153J	CP 0.015 UF 50V	P1E4I0103J	CP 0.01 UF 50V
C318	E0E7I2101M	CE 100 UF 16V	E0E7I2470M	CE 47 UF 16V
C432	P1E4I0152J	CP 0.0015 UF 50V	P1E4I0332J	CP 0.0033 UF 50V
C433	P1E4I0152J	CP 0.0015 UF 50V	P1E4I0332J	CP 0.0033 UF 50V
D820		———	D92I02R7B2	DIODE,ZENER RD2.7EB2 IA11R
D821		———	D1VT041480	DIODE,SILICON 1N4148I-77
PCB101	A10801A01A	MAIN PCB ASS'Y	A10801A01B	MAIN PCB ASS'Y
PCB102	A10801A12A	PLL EQ PCB ASS'Y	A10801A12B	PLL EQ PCB ASS'Y
PCB301	A10801A20A	LED PCB ASS'Y	A10801A20B	LED PCB ASS'Y
PCB401	A10801A13A	LEVEL METER PCB ASS'Y	A10801A13B	LEVEL METER PCB ASS'Y
PCB402	A10801A07A	HEADPHONE PCB ASS'Y	A10801A07B	HEADPHONE PCB ASS'Y
PCB501	A10801A34A	POWER SWITCH PCB ASS'Y	A10801A34B	POWER SWITCH PCB ASS'Y
PCB502	A10801A30A	FILTER PCB ASS'Y	A10801A30B	FILTER PCB ASS'Y

Production improvement

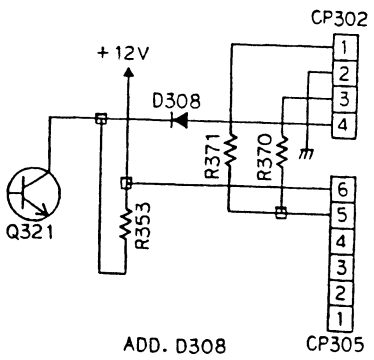
Ref.No	Chassis Cord A,B		Chassis Cord C	
	Part No	Description	Part No	Description
CD301	068127021A	CORD,EIS CONNECTOR 8127021A	068127021B	CORD,EIS CONNECTOR 8127021B
CD801	068128020A	CORD,EIS CONNECTOR 8128020A	068128020B	CORD,EIS CONNECTOR 8128020B
CD802	068128022A	CORD,EIS CONNECTOR 8128022A	068128022B	CORD,EIS CONNECTOR 8128022B
CD804	068125019A	CORD,EIS CONNECTOR 8125019A	068125019B	CORD,EIS CONNECTOR 8125019B
CD901	068125018A	CORD,EIS CONNECTOR 8125018A	068125018B	CORD,EIS CONNECTOR 8125018B
CP301	069X270119	CONNECTOR,PCB SIDE B7B-PH-K	069X260119	CONNECTOR,PCB SIDE B6B-PH-K
C356	C0I0F04H4Z	CC 0.022 UF 50V YF		DEL.
C357	C0I0F04H4Z	CC 0.022 UF 50V YF		DEL.
D515		———	D1VT041480	DIODE,SILICON 1N4148I-77
D516		———	D1VT041480	DIODE,SILICON 1N4148I-77

MAIN SCHEMATIC DIAGRAM

(CHASSIS CODE A,B)



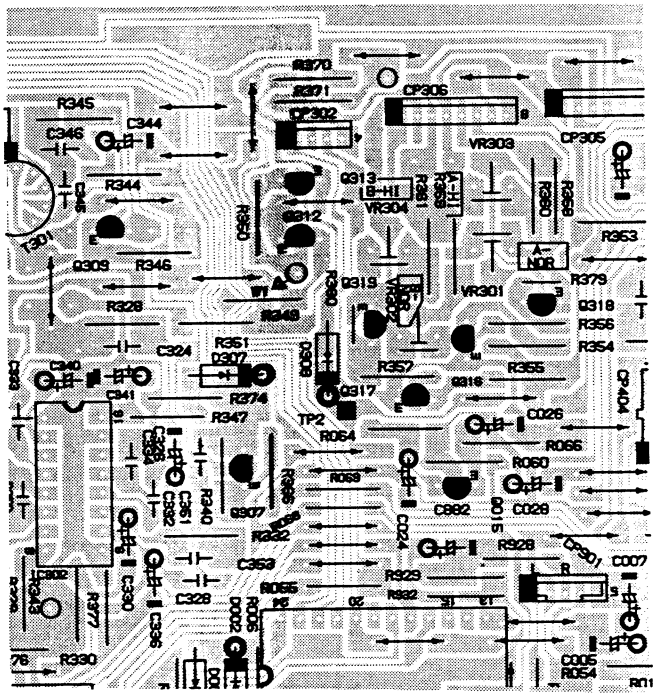
(CHASSIS CODE C)



ADD. D308

MAIN P.C.BOARD

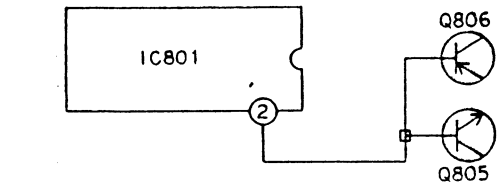
(CHASSIS CODE C)

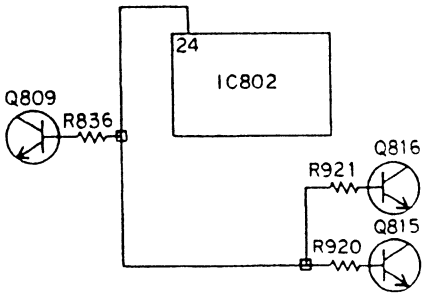


ADD. D308

CD DECORDER SCHEMATIC DIAGRAM

(CHASSIS CODE A,B)





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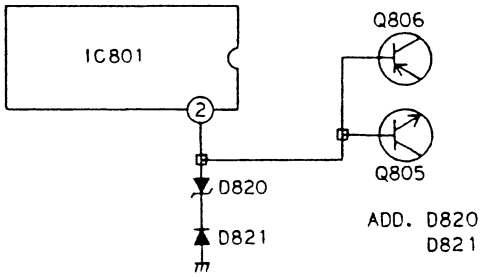
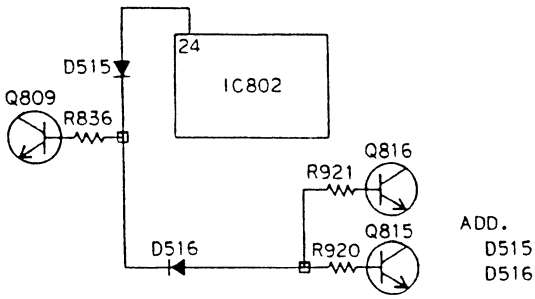


ADD. D820
D821



ADD.
D515
D516

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